August 23, 2021
Revised June 28, 2022

21-186 Original
22-167 Revised

Mr. Kevin Wagner
XL Construction
851 Buckeye Court
Milpitas, CA 95035
(415) 624-4112
kwagner@xlconstruction.com

Limited Asbestos and Lead Survey with PCBs
2118 Milvia Street, Floors 1-3 & Roof
Berkeley, CA

Dear Mr. Wagner:

Pursuant to your request and authorization, EnviroNova, LLC. (EnviroNova) is pleased to present this report to XL Construction (XLC) for a limited asbestos, lead and polychlorinated biphenyls (PCBs) survey completed on the roof and Floors 1-3 of the building located at 2118 Milvia Street in Berkeley, California (Site). All work was conducted by properly certified field and professional staff according to applicable federal, state, and local regulations.

On August 13, 2021, EnviroNova collected suspect material samples from areas of the Site where construction activities will disturb floor, wall, and ceiling materials. The asbestos and lead samples were submitted under chain of custody procedures to Environmental Laboratories P&K in South San Francisco, California. The asbestos samples were analyzed via polarized light microscopy (PLM) in accordance with the method specified in appendix A subpart F 40 CFR Part 763, Section 1, and the lead samples were analyzed via atomic absorption in accordance with EPA Method 7000B. A map detailing sample locations is also attached.

EnviroNova also performed a survey of all existing universal and electronic waste in the building for recycling and disposal purposes. *"The City of Berkeley requires that 100% of asphalt, concrete, excavated soil and land-clearing debris and a minimum of 65% of other nonhazardous construction and demolition waste shall be diverted from disposal at subject building projects by recycling, reuse, or salvage."* Therefore, XLC shall meet these requirements when completing the demolition scope.

On June 16, 2022, EnviroNova returned to the Site to collect additional samples of the stucco and concrete walls at locations potentially impacted by PCB-containing caulking materials, along with additional suspect asbestos-containing materials. The PCB samples were submitted to McCampbell Analytical Laboratories in Pittsburg, California and the asbestos samples were submitted to Asbestos TEM Laboratories in Oakland, California, and the samples were analyzed in accordance with the methods listed above.

ASBESTOS

Suspect asbestos materials were organized into fifty-one (51) homogeneous areas of materials, resulting in one hundred twenty-four (124) bulk samples analyzed. Based on the certified analytical report, fifteen (15) of the materials sampled tested positive for asbestos and the remainder were reported as "None Detected." Therefore, asbestos abatement procedures will be required.

Table I below summarizes the materials and locations of the samples found to contain asbestos. The certified report of laboratory analysis and chain of custody documentation are attached.

Table IA – Asbestos Content in Sampled Material

Material Description and Location	Asbestos %	TSI	Surfacing	Miscellaneous	RACM	*Cat. I Non-Friable	*Cat. II Non-Friable
Off-White Joint Compound in White Drywall System, Floor 3 Walls Throughout	2% CH			X	X		
Off-White Compound with Paint (Texture) in White Drywall System, Floor 3 Walls Throughout	2% CH		X		X		
Black Roofing Mastic with Silver Coating, Roof Perimeter Seal	3% CH			X		X	
Black Roofing Mastic with Silver Coating, Roof Penetrations	3% CH			X		X	
Black + Yellow Mastic on Beige Vinyl Floor Tile and Red Sheet Flooring, Floor 3, Kitchen Floor	3% CH			X		X	
Black Mastic, Mirror Mastic in Restrooms Throughout	10% CH			X		X	
Off-White Joint Compound in White Drywall System, Floor 2 Walls Throughout	2% CH			X	X		
Off-White Compound with Paint (Texture) in White Drywall System, Floor 2 Walls Throughout	2% CH		X		X		
Black + Yellow Mastic on Beige Vinyl Floor Tile, Floor 2, Kitchen/Lounge Area Floor	3% CH			X		X	
Black Sink Undercoat, Floor 2 Break Area Sink	5% CH			X		X	

Table IA – Asbestos Content in Sampled Material (Continued)

Material Description and Location	Asbestos %	TSI	Surfacing	Miscellaneous	RACM	*Cat. I Non-Friable	*Cat. II Non-Friable
Black + Yellow Mastic on Blue Carpet Squares, Floor 1, Entry Floor	2% CH			X		X	
Black + Yellow Mastic on Brown Roll-out Carpet, Floor 1, Office Floors	2% CH			X		X	
Black Mastic on Electrical Closet Floor & Under Tile, Floor 1, Elevator Lobby	6% CH			X		X	
Black + Yellow Mastic on Beige Vinyl Floor Tile, Floor 1, Hallway Sink Floor	3% CH			X		X	
White Door Insulation Stairwell Doors Throughout	10-20% AM 20-30% CH	X			X		

*CH=Chrysotile Asbestos. AM=Amosite Asbestos *Point Count Needed to remove RACM designation. ND="Non-Detect"*

Table IB – Asbestos Content in Point Counted Samples

Sample ID	Material Description and Location	Asbestos Type	Asbestos Points counts	Asbestos Concentration
3-DW-2	Off-White Compound with Paint (Texture) in White Drywall System, Floor 3 Walls Throughout	CH	8	0.8%
3-DW-2	White Drywall System with Off-White Joint Compound (Composite), Floor 3, Walls Throughout	CH	0	ND <0.1%
2-DW-1	Off-White Compound with Paint (Texture) in White Drywall System, Floor 2 Walls Throughout	CH	11	1.1%
2-DW-2	White Drywall System with Off-White Joint Compound (Composite), Floor 2, Walls Throughout	CH	1	0.1%

CH=Chrysotile Asbestos. AA=Anthophyllite Asbestos. ND="Non-Detect"

Table II below summarizes the materials and locations of samples found NOT to contain asbestos. The certified laboratory report of analysis and chain of custody documentation are attached.

Table II– Materials Found NOT to Contain Asbestos

Material Description	Material Location
White Ceiling Tile	Floor 3, Ceiling Throughout
Blue Vinyl Baseboard + Yellow Mastic	Floor 3, Walls Throughout
Brown Carpet + Yellow Mastic	Floor 3, Carpet Flooring Throughout
Gray Stucco + White Stucco w/ Paint	Floor 3, Cinderblock Walls
Black Roofing Tar and Felt + Black Roofing Material + Silver Coating	Roof, Sheet Roofing Material Throughout
White Mastic + White Sealant + Black Roofing Material	Roof, Perimeter Seal
Gray Coating + Black Roofing Material	Roof, Patches Throughout
Gray Stucco + White Stucco w/ Paint	Roof & Building Exterior, Throughout Façade
Gray Mastic + Black Roofing Material	Roof, HVAC Mastic
White Sink Undercoat	Floor 3, Kitchen Sink
Gray Flooring Material + White Fibrous Material	Floor 3, Balcony Floor
Pink Ceramic Tile + White Compound	Floor 3, Women's Restroom Wall
Beige Ceramic Tile + Gray Mortar	Floor 3, Women's Restroom Floor
Blue Ceramic Tile + White Compound	Floor 3, Men's Restroom Wall
Gray Ceramic Tile + Gray Mortar	Floor 3, Men's Restroom Floor
Beige Mastic	HVAC Duct Mastic Throughout Building
Blue Vinyl Baseboard + Yellow Mastic	Floor 2, Walls Throughout
Brown Carpet + Yellow Mastic + Gray Fibrous Material	Floor 2, Carpet Flooring Throughout
Pink Ceramic Tile + White Compound	Floor 2, Women's Restroom Wall
Beige Ceramic Tile + Gray Mortar + Gray Grout	Floor 2, Women's Restroom Floor
Cream Ceramic Tile + White Compound	Floor 2, Men's Restroom Wall
Gray Ceramic Tile + Gray Mortar + Gray Grout	Floor 2, Men's Restroom Floor
Gray Vinyl Floor Tile + Yellow Mastic + Gray Leveling Compound	Floor 2, Kitchen / Lounge Area Floor
Gray Stucco w/ Paint	Floor 2, Cinderblock Walls

Table II– Materials Found NOT to Contain Asbestos (Continued)

Material Description	Material Location
Tan Tall Vinyl Baseboard + Multicolored Mastic	Floor 2, Walls Throughout
White Ceiling Tile	Floor 2, Ceiling Throughout
White Drywall System	Floor 1, Walls Throughout
Pink Ceramic Tile + White Compound + Yellow Adhesive	Floor 1, Women's Restroom Wall
Beige Ceramic Tile + Gray Mortar + Gray Sealant	Floor 1, Women's Restroom Floor
Cream Ceramic Tile	Floor 1, Men's Restroom Wall
White Ceramic Tile + Gray Mortar + Gray Sealant	Floor 1, Men's Restroom Floor
Tan Vinyl Baseboard + Yellow Mastic	Floor 1, Entry Walls
Gray Vinyl Baseboard + Yellow Mastic	Floor 1, Office Walls
White Ceiling Tile (Square)	Floor 1, Entry Ceiling
White Ceiling Tile (Rectangle)	Floor 1, Office Ceilings
Gray Stucco w/ Paint	Floor 1, Cinderblock Walls
Brown/Orange Vinyl Baseboard + Yellow Mastic	Floor 1, Electrical Closet Walls
White Caulk	Building Exterior, Windows on Milvia Street
Black Caulk	Building Exterior, Windows on Center Street

Assumed Asbestos Containing Materials

Roofing materials and materials outside of the planned work areas were not addressed during this limited asbestos survey, but if disturbance of such materials becomes necessary, the materials would be assumed to be positive for asbestos unless further survey sampling is completed.

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LEAD

Twenty-four (24) paint and material samples from homogeneous areas were collected and analyzed for lead content, resulting in one (1) of the samples testing above the 600 ppm limit for paint as defined in Title 8 CCR 1532.1.

Table III below summarizes the tested materials and locations. The certified laboratory report of analysis and chain of custody documentation are attached.

Table III – Lead Content in Sampled Materials

Material Description	Sample Location	Lead Content
Beige Paint	Roof, Building Exterior Walls	58 ppm
Brown Paint	Floor 3, Balcony Railing	ND <59 ppm
Beige Ceramic Tile	Floor 3, Women's Restroom Floor	ND <38 ppm
Pink Ceramic Tile	Floor 3, Women's Restroom Wall	53 ppm
Gray Ceramic Tile	Floor 3, Men's Restroom Floor	ND <40 ppm
Blue Ceramic Tile	Floor 3, Men's Restroom Wall	46 ppm
Yellow Paint	Floor 3, Accent Walls	ND <37 ppm
White Paint	Floor 3, Walls Throughout	ND <40 ppm
Beige Ceramic Tile	Floor 2, Women's Restroom Floor	ND <36 ppm
Pink Ceramic Tile	Floor 2, Women's Restroom Wall	ND <39 ppm
Gray Ceramic Tile	Floor 2, Men's Restroom Floor	ND <39 ppm
Cream Ceramic Tile	Floor 2, Men's Restroom Wall	ND <39 ppm
White Paint	Floor 2, Walls Throughout	ND <38 ppm
Yellow Paint	Floor 2, Accent Walls	**640 ppm**
Beige Ceramic Tile	Floor 1, Women's Restroom Floor	ND <38 ppm
Pink Ceramic Tile	Floor 1, Women's Restroom Wall	ND <37 ppm
Gray Ceramic Tile	Floor 1, Men's Restroom Floor	60 ppm
Cream Ceramic Tile	Floor 1, Men's Restroom Wall	ND <40 ppm
Red Paint	Floor 1, Steel Beams at Entry	490 ppm
Yellow Paint	Floor 1, Accent Walls	ND <40 ppm
White Paint	Floor 1, Walls Throughout	ND <40 ppm
Gray Paint	Floor 1, Sheetrock on Entry Desks	ND <38 ppm

Table III – Lead Content in Sampled Materials (Continued)

Material Description	Sample Location	Lead Content
Beige Paint	Building Exterior, Milvia Street Façade	160 ppm
White Paint	Building Exterior, Center Street Façade	230 ppm

ppm = Parts per million, ND = Not detected above indicated reporting limit,
Bold = Abatement procedures required prior to significant disturbance due to Lead-Containing Paint or materials
Bold + Red = Abatement procedures and hazardous waste disposal required prior to significant disturbance due to Lead-Based Paint or Materials

POLYCHLORINATED BIPHENYLS

The Environmental Protection Agency (EPA) believes that there was a potentially widespread use of PCB-containing building materials in schools and other buildings built or renovated between 1950 and 1979. Historically, PCBs were used as a plasticizing agent for caulking and glazing materials, as additives to paints and floor finishes, as a sealant for heating systems and plumbing, and as insulators in ballast and other electrical equipment. The manufacture and use of PCBs were banned in the United States in 1976, and PCB compounds were phased out between 1978 and 1979. The EPA has set forth two classifications of PCB product:

1. **PCB Bulk Product Waste (≥ 50 ppm).** According to Environmental Protection Agency (EPA), Memorandum, "PCB Bulk Product Waste Reinterpretation" dated October 24, 2012, Building materials "Coated or serviced" with PCB bulk product waste (e.g., caulk, paint, mastic, sealants) at the time of designation for disposal to be managed as a PCB bulk product waste. The reinterpretation document allows for disposal of both PCB Bulk Product Waste and PCB Remediation Waste together as a single waste stream (PCB Bulk Product Waste).

2. **Excluded PCB Product.** This is classified as all materials containing <50 ppm.

EnviroNova collected samples of suspect PCBs-containing window caulking, and noted the presence of ballasts in the fluorescent lighting. However, due to limited sampling capabilities, EnviroNova did not collect ballasts for laboratory analytical testing. Table IV below summarizes the tested materials and locations.

Table IV – PCBs Content in Sampled Materials

Material Description	Sample Location	Analytical Results	EPA PCB Waste Classification
White Caulk	Building Exterior, Milvia St. Windows	1,600 mg/kg	**PCB Bulk Product**
Black Caulk	Building Exterior, Center St. Windows	1,500 mg/kg	**PCB Bulk Product**

1 mg/kg = 1 ppm

PCB Adjacent Wall Contamination Investigation

On June 16, 2022, EnviroNova collected bulk material samples of the wall materials adjacent to the PCB-containing caulking to determine if any of the PCBs had leached into the surrounding materials and thus required abatement procedures.

EnviroNova's bulk sampling was completed as follows:

1. A rotary hammer was used to collect the bulk samples from the floor in order to crush the material for laboratory analysis. A scale was utilized in the field to confirm that a minimum of ten (10) grams of material was submitted per sample following EPA guidance. The samples were collected from the of the surface closest to the PCB containing concrete joint sealant. At each locations, samples were collected at approximately 1 and 3 inches away from the edge of the joint labeled respectively with sample suffixes A-1(1 inch away from sealant) and A-3(3 inch away from sealant).
2. Samples were labeled, packaged, and documented on a chain of custody for shipping to the laboratory.
3. Samples were shipped to the laboratory in a chilled ice chest.
4. Equipment and tools were decontaminated using a two-step decontamination process. First, all used tools were cleaned using a solution of Simple Green. Second, each piece was rinsed using distilled water. After the two-step decontamination procedures, the equipment was placed on top of clean paper towels (or equivalent material) and set to dry individually. Each piece of equipment was inspected by EnviroNova for evidence of residual dust and debris.

Table V on the page below summarizes the tested materials and locations.

Table V – PCBs Content in Sampled Adjacent Wall Materials

Sample ID	Sample Location	Analytical Results PCBs, Total	Percent Moisture	EPA PCB Waste Classification
2118M-A-1	Floor 3, 1" from PCB Caulk	ND	0.76%	Excluded PCB Product
2118M-A-3	Floor 3, 3" from PCB Caulk	ND	0.81%	Excluded PCB Product
2118M-B-1	Floor 3, 1" from PCB Caulk	ND	0.656%	Excluded PCB Product
2118M-B-3	Floor 3, 3" from PCB Caulk	ND	0.7%	Excluded PCB Product
2118M-C-1	Floor 3, 1" from PCB Caulk	**75**	0.782%	**PCB Bulk Waste**
2118M-C-3	Floor 3, 3" from PCB Caulk	1.9	0.79%	Excluded PCB Product
2118M-D-1	Floor 2 Stairwell, 1" from PCB Caulk	**110**	0.484%	**PCB Bulk Waste**
2118M-D-3	Floor 2 Stairwell, 3" from PCB Caulk	4.5	0.455%	Excluded PCB Product
2118M-E-1	Floor 2, 1" from PCB Caulk	**130**	0.55%	**PCB Bulk Waste**
2118M-E-3	Floor 2, 3" from PCB Caulk	6.6	0.468%	Excluded PCB Product
2118M-F-1	Floor 2, 1" from PCB Caulk	**170**	0.8%	**PCB Bulk Waste**
2118M-F-3	Floor 2, 3" from PCB Caulk	15	1.07%	Excluded PCB Product
2118M-G-1	Floor 1, 1" from PCB Caulk	31	2.14%	Excluded PCB Product

Sample ID	Sample Location	Analytical Results PCBs, Total	Percent Moisture	EPA PCB Waste Classification
2118M-G-3	Floor 1, 3" from PCB Caulk	1.8	1.34%	Excluded PCB Product
2118M-H-1	Floor 1, 1" from PCB Caulk	**55**	1.34%	**PCB Bulk Waste**
2118M-H-3	Floor 1, 3" from PCB Caulk	3.2	1.74%	Excluded PCB Product
2118M-I-1	Floor 1, 1" from PCB Caulk	7.8	0.67%	Excluded PCB Product
2118M-I-3	Floor 1, 3" from PCB Caulk	1.0	0.94%	Excluded PCB Product

1 mg/kg = 1 ppm

CONCLUSIONS AND RECOMMENDATIONS

Based upon the results of analyses for asbestos and lead, which indicated that both are present, EnviroNova recommends a properly certified abatement contractor be utilized to remove/abate asbestos- and lead-containing materials prior to disturbance related to any demolition/renovation activities. Additionally, the removal or abatement activities should be monitored for compliance, and clearance testing of contained areas is recommended before considering the abatement complete. A 10 day notification to the local air district is required due to the presence of RACM (regulated asbestos-containing materials).

Based upon the results of analyses for PCBs, which indicated that PCB Bulk Product Waste materials are present, EnviroNova recommends a properly certified abatement contractor be utilized to remove these materials and the adjacent wall materials prior to disturbance related to any demolition/renovation activities. Follow all regulatory requirements for disposal.

During construction activities, if other suspected asbestos or lead-containing materials, including paint are encountered, those materials must be assumed to contain asbestos and/or lead. Therefore, any suspect materials must be sampled prior to their disturbance.

Lead Work Guidelines and Regulations

Loose and flaking paints should be scraped down to intact paint (and the resulting paint chips captured for disposal), prior to demolition by a registered lead abatement contractor. Only components with intact, well-adhered paint will then remain during demolition. Ceramic tile with high lead content should also be removed prior to demolition. The owner or removal/demolition contractor should conduct appropriate segregation of waste created during the removal or dismantling/demolition process and dispose of the different waste streams in accordance regulatory requirements based on appropriate testing results.

The current Cal/OSHA Lead in Construction Safety Standard (Title 8 CCR 1532.1) regulation applies to all construction work where an employee may be occupationally exposed to lead. Therefore, work performed on surfaces (including manual demolition, scraping, welding, etc.) containing any amount of lead must comply with the standard, including an exposure assessment (personal air monitoring) to determine if the airborne lead exposure levels are within acceptable limits. Therefore, any work performed on a surface containing any amount of lead must comply with this regulation. Any paint not represented by a result that is below the analytical limit of detection should be considered to contain lead and be treated as such until proven otherwise.

Lead waste is considered a hazardous waste if the result of the Toxicity Characterization Leaching Procedure (TCLP) test exceeds 5 mg/liter (5 ppm), under the Resource Conservation and Recovery Act (RCRA), 40 CFR 261, Appendix II. In California, a waste is also considered hazardous if the result of soluble lead content by a Waste Extraction Test (WET) is greater than 5 mg/l, or if the total lead content exceeds 1,000 mg/kg in accordance with Title 22 of the CCR. When TTLC results are below 50 mg/kg, STLC/TCLP limits cannot be exceeded, so the waste is classified as non-hazardous. For detailed regulatory requirements in specific situations, EnviroNova may be consulted, and the applicable regulations should be examined.

As required by the California Department of Public Health, Title 17, Article 16 Regulations, dated January 8, 1999, EnviroNova will forward Form 8552 to CDPH notifying them of the presence/absence of lead-based paint in the areas tested at the subject property.

Limitations

This survey was conducted as a limited renovation survey. Materials that were not included within the agreed upon scope of work, or could not be sampled discretely, were assumed to contain asbestos and/or lead. Until rebutted by appropriate sampling and analysis, these materials should be assumed to contain asbestos.

The survey was planned and implemented on the basis of a mutually agreed upon scope of work, and EnviroNova's previous experience in performing building surveys for asbestos and lead containing materials. EnviroNova uses only qualified professionals and laboratories to perform building surveys and sample analyses. PLM is generally not capable of detecting extremely fine fibers (<0.3µm in diameter). Further analysis by transmission electron microscopy is able to detect smaller fibers. However, this is a concern only with certain materials such as floor tiles.

This document was prepared by EnviroNova at the direction of XLC for the sole use of XLC and their sub-contractors, whom are the only intended beneficiaries of this work. No other party should rely on the information contained herein without the prior written consent of EnviroNova. This report and the interpretations, conclusions, and recommendations contained within are based in part on information presented in other documents or by other parties that are cited in the text. Therefore, this report is subject to the limitations and qualifications presented in the referenced information.

EnviroNova appreciates the opportunity to present this report. Please contact Basil Falcone at (415) 599-6657 if you have any questions. We look forward to working with you again.

Respectfully submitted,

ENVIRONOVA
Environmental Health & Safety Management

Brenna Deane

Brenna Deane, CSST (#19-6572)
Staff Scientist

John B. Adams

John B. Adams, CAC (#12-4899), CDPH-I/A (#LRC-059)
Senior Environmental Scientist

Basil Falcone

Basil Falcone, REA, CAC (#04-3597)
President

Attachments
Table of Electronic & Universal Waste
Certified Laboratory Analytical Report
Chain of Custody Documentation
Map of Sample Locations
Summary Work Plan
Hazardous Materials Specifications

21-186 2118 Milvia Street, Berkeley CA

Item	Floor 3	Floor 2	Floor 1	TOTALS
Lights	82	139	151	**372**
Fire Extinguisher	1	3	3	**7**
Speaker/Strobe	7	23	17	**47**
Smoke Detector	22	52	40	**114**
Exit Signs	3	8	13	**24**
Thermostat	5	5	4	**14**
Fire Alarm Pull	1	1	4	**6**
HVAC Oil	7 (roof)			**7**
Fire Doors	2	2	2	**6**

eurofins | EMLab P&K

Report for:

Mr. Basil Falcone
Enviro Nova
235 Montgomery Street
Suite 1105
San Francisco, CA 94104

Regarding: Project: 21-186; 2118 Milvia Street, Berkeley, CA
EML ID: 2709217

Approved by:

Approved Signatory
Amber Rutter

Dates of Analysis:
Asbestos PLM: 08-16-2021 and 08-17-2021

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 500053-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins EMLab P&K
4955 Yarrow Street , Arvada, CO 80002
(800) 651-4802 Fax (623) 780-7695 www.emlab.com

Client: Enviro Nova
C/O: Mr. Basil Falcone
Re: 21-186; 2118 Milvia Street, Berkeley, CA

Date of Sampling: 08-13-2021
Date of Receipt: 08-13-2021
Date of Report: 08-17-2021

ASBESTOS PLM REPORT

Total Samples Submitted:	121
Total Samples Analyzed:	121
Total Samples with Layer Asbestos Content > 1%:	28

Location: 3-CT-1, Ceiling tile, floor 3, rectangular white ceiling tile throughout Lab ID-Version‡: 12958460-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 40% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 3-CT-2, Ceiling tile, floor 3, rectangular white ceiling tile throughout Lab ID-Version‡: 12958461-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 40% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 3-BB-1, Vinyl baseboard, floor 3, blue vinyl baseboard and white/yellow mastic throughout Lab ID-Version‡: 12958462-1

Sample Layers	Asbestos Content
Blue Baseboard	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 3-BB-2, Vinyl baseboard, floor 3, blue vinyl baseboard and white/yellow mastic throughout Lab ID-Version‡: 12958463-1

Sample Layers	Asbestos Content
Blue Baseboard	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Client: Enviro Nova
C/O: Mr. Basil Falcone
Re: 21-186; 2118 Milvia Street, Berkeley, CA

Date of Sampling: 08-13-2021
Date of Receipt: 08-13-2021
Date of Report: 08-17-2021

ASBESTOS PLM REPORT

Location: 3-YCM-1, Carpet mastic, floor 3, yellow mastic under brown carpet and gray pad

Lab ID-Version‡: 12958464-1

Sample Layers	Asbestos Content
Brown Carpet	ND
Yellow Mastic	ND
Composite Non-Asbestos Content:	40% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Date of Sampling: 08-13-2021
Date of Receipt: 08-13-2021
Date of Report: 08-17-2021

ASBESTOS PLM REPORT

Location: 3-YCM-2, Carpet mastic, floor 3, yellow mastic under brown carpet and gray pad Lab ID-Version‡: 12958465-1

Sample Layers	Asbestos Content
Brown Carpet	ND
Yellow Mastic	ND
Composite Non-Asbestos Content:	40% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: 3-DW-1, Drywall system, floor 3, white drywall system on walls throughout Lab ID-Version‡: 12958466-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Off-White Compound with Paint	2% Chrysotile
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: 3-DW-2, Drywall system, floor 3, white drywall system on walls throughout Lab ID-Version‡: 12958467-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Off-White Joint Compound	2% Chrysotile
Cream Tape	ND
Off-White Compound with Paint	2% Chrysotile
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Comments: Composite asbestos content provided is only for Drywall/Joint compound. Composite content provided for this analysis has been performed by following the NESHAP guidelines.

Location: 3-DW-3, Drywall system, floor 3, white drywall system on walls throughout Lab ID-Version‡: 12958468-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Off-White Joint Compound	2% Chrysotile
Cream Tape	ND
Off-White Compound with Paint	2% Chrysotile
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Comments: Composite asbestos content provided is only for Drywall/Joint compound. Composite content provided for this analysis has been performed by following the NESHAP guidelines.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Re: 21-186; 2118 Milvia Street, Berkeley, CA

Date of Sampling: 08-13-2021
Date of Receipt: 08-13-2021
Date of Report: 08-17-2021

ASBESTOS PLM REPORT

Location: 3-DW-4, Drywall system, floor 3, white drywall system on walls throughout Lab ID-Version‡: 12958469-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Off-White Joint Compound	2% Chrysotile
Cream Tape	ND
Off-White Compound with Paint	2% Chrysotile
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Comments: Composite asbestos content provided is only for Drywall/Joint compound. Composite content provided for this analysis has been performed by following the NESHAP guidelines.

Location: 3-DW-5, Drywall system, floor 3, white drywall system on walls throughout Lab ID-Version‡: 12958470-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Off-White Joint Compound	2% Chrysotile
Cream Tape	ND
Off-White Compound with Paint	2% Chrysotile
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Comments: Composite asbestos content provided is only for Drywall/Joint compound. Composite content provided for this analysis has been performed by following the NESHAP guidelines.

Location: 3-DW-6, Drywall system, floor 3, white drywall system on walls throughout Lab ID-Version‡: 12958471-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Off-White Joint Compound	2% Chrysotile
Cream Tape	ND
Off-White Compound with Paint	2% Chrysotile
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Comments: Composite asbestos content provided is only for Drywall/Joint compound. Composite content provided for this analysis has been performed by following the NESHAP guidelines.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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Re: 21-186; 2118 Milvia Street, Berkeley, CA

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ASBESTOS PLM REPORT

Location: 3-DW-7, Drywall system, floor 3, white drywall system on walls throughout Lab ID-Version‡: 12958472-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Off-White Joint Compound	2% Chrysotile
Cream Tape	ND
Off-White Compound with Paint	2% Chrysotile
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Comments: Composite asbestos content provided is only for Drywall/Joint compound. Composite content provided for this analysis has been performed by following the NESHAP guidelines.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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ASBESTOS PLM REPORT

Location: 3-CBW-1, Cinderblock and stucco, floor 3, gray cinderblock wall and white stucco inside

Lab ID-Version‡: 12958473-1

Sample Layers	Asbestos Content
Gray Stucco	ND
White Stucco with Paint	ND
Sample Composite Homogeneity:	Moderate

Location: 3-CBW-2, Cinderblock and stucco, floor 3, gray cinderblock wall and white stucco inside

Lab ID-Version‡: 12958474-1

Sample Layers	Asbestos Content
Gray Stucco	ND
White Stucco with Paint	ND
Sample Composite Homogeneity:	Moderate

Location: 3-CBW-3, Cinderblock and stucco, floor 3, gray cinderblock wall and white stucco inside

Lab ID-Version‡: 12958475-1

Sample Layers	Asbestos Content
Gray Stucco	ND
White Stucco with Paint	ND
Sample Composite Homogeneity:	Moderate

Location: R-A, Roofing material, roof, gray and black sheet roofing material throughout roof

Lab ID-Version‡: 12958476-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt	ND
Black Roofing Material	ND
Silver Coating	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Poor

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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ASBESTOS PLM REPORT

Location: R-B, Roofing material, roof, gray and black sheet roofing material throughout roof

Lab ID-Version‡: 12958477-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt	ND
Black Roofing Material	ND
Silver Coating	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: R-C, Roofing material, roof, gray and black sheet roofing material throughout roof

Lab ID-Version‡: 12958478-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt	ND
Black Roofing Material	ND
Silver Coating	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: R-D, Perimeter seal, roof, white seal material around perimeter of roof

Lab ID-Version‡: 12958479-1

Sample Layers	Asbestos Content
White Sealant	ND
Sample Composite Homogeneity:	Good

Location: R-E, Perimeter seal, roof, white seal material around perimeter of roof

Lab ID-Version‡: 12958480-1

Sample Layers	Asbestos Content
White Sealant	ND
Black Roofing Mastic with Silver Coating	3% Chrysotile
Sample Composite Homogeneity:	Poor

Comments: Some layers in the sample were inseparable without cross contamination.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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ASBESTOS PLM REPORT

Location: R-F, Perimeter seal, roof, white seal material around perimeter of roof Lab ID-Version‡: 12958481-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Sealant	ND
Silver Coating	ND
Sample Composite Homogeneity:	Poor

Location: R-G, Penetration mastic, roof, white/gray mastic at penetrations throughout Lab ID-Version‡: 12958482-1

Sample Layers	Asbestos Content
White Mastic	ND
White Sealant	ND
Black Roofing Mastic with Silver Coating	3% Chrysotile
Sample Composite Homogeneity:	Poor

Comments: Some layers in the sample were inseparable without cross contamination.

Location: R-H, Penetration mastic, roof, white/gray mastic at penetrations throughout Lab ID-Version‡: 12958483-1

Sample Layers	Asbestos Content
White Mastic	ND
Black Mastic	ND
Silver Coating	ND
Sample Composite Homogeneity:	Poor

Location: R-J, Patching material, roof gray/black material on patches throughout Lab ID-Version‡: 12958484-1

Sample Layers	Asbestos Content
Gray Coating	ND
Black Roofing Material	ND
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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ASBESTOS PLM REPORT

Location: R-K, Patching material, roof gray/black material on patches throughout Lab ID-Version‡: 12958485-1

Sample Layers	Asbestos Content
Gray Coating	ND
Black Roofing Material	ND
Sample Composite Homogeneity:	Moderate

Location: R-M, Exterior stucco, roof, gray stucco on building exterior Lab ID-Version‡: 12958486-1

Sample Layers	Asbestos Content
Gray Stucco	ND
White Stucco with Paint	ND
Sample Composite Homogeneity:	Moderate

Location: R-N, Exterior stucco, roof, gray stucco on building exterior Lab ID-Version‡: 12958487-1

Sample Layers	Asbestos Content
Gray Stucco	ND
Sample Composite Homogeneity:	Good

Location: R-O, Exterior stucco, roof, gray stucco on building exterior Lab ID-Version‡: 12958488-1

Sample Layers	Asbestos Content
Gray Stucco	ND
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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ASBESTOS PLM REPORT

Location: BE-Stucco-1, Exterior stucco, building exterior, gray stucco throughout facade

Lab ID-Version‡: 12958489-1

Sample Layers	Asbestos Content
Gray Stucco	ND
White Stucco with Paint	ND
Sample Composite Homogeneity:	Moderate

Location: BE-Stucco-2, Exterior stucco, building exterior, gray stucco throughout facade

Lab ID-Version‡: 12958490-1

Sample Layers	Asbestos Content
Gray Stucco	ND
White Stucco with Paint	ND
Sample Composite Homogeneity:	Moderate

Location: BE-Stucco-3, Exterior stucco, building exterior, gray stucco throughout facade

Lab ID-Version‡: 12958491-1

Sample Layers	Asbestos Content
Gray Stucco	ND
White Stucco with Paint	ND
Sample Composite Homogeneity:	Moderate

Location: BE-Stucco-4, Exterior stucco, building exterior, gray stucco throughout facade

Lab ID-Version‡: 12958492-1

Sample Layers	Asbestos Content
Gray Stucco	ND
White Stucco with Paint	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: R-Q, HVAC mastic, roof, black/gray mastic on HVAC units Lab ID-Version‡: 12958493-1

Sample Layers	Asbestos Content
Gray Mastic	ND
Black Roofing Material	ND
Composite Non-Asbestos Content:	20% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: R-R, HVAC mastic, roof, black/gray mastic on HVAC units Lab ID-Version‡: 12958494-1

Sample Layers	Asbestos Content
Gray Mastic	ND
Black Roofing Material	ND
Composite Non-Asbestos Content:	20% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: 3-VFT-1, Vinyl floor tile, floor 3, red and beige vinyl floor tile on kitchen floor

Lab ID-Version‡: 12958495-1

Sample Layers	Asbestos Content
Beige Floor Tile	ND
Black/Yellow Mastic	3% Chrysotile
Red Sheet Flooring with Fibrous Backing	ND
Composite Non-Asbestos Content:	30% Cellulose
Sample Composite Homogeneity:	Poor

Location: 3-VFT-2, Vinyl floor tile, floor 3, red and beige vinyl floor tile on kitchen floor

Lab ID-Version‡: 12958496-1

Sample Layers	Asbestos Content
Beige Floor Tile	ND
Black/Yellow Mastic	3% Chrysotile
Red Sheet Flooring with Fibrous Backing	ND
Composite Non-Asbestos Content:	30% Cellulose
Sample Composite Homogeneity:	Poor

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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ASBESTOS PLM REPORT

Location: 3-Sink, Sink undercoat, floor 3, white undercoat on kitchen sink Lab ID-Version‡: 12958497-1

Sample Layers	Asbestos Content
White Sink Undercoating	ND
Sample Composite Homogeneity:	Good

Location: 3B-Floor-1, Balcony flooring material, floor 3 balcony, gray flooring material exterior Lab ID-Version‡: 12958498-1

Sample Layers	Asbestos Content
Gray Flooring	ND
White Fibrous Material	ND
Composite Non-Asbestos Content:	10% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: 3B-Floor-2, Balcony flooring material, floor 3 balcony, gray flooring material exterior Lab ID-Version‡: 12958499-1

Sample Layers	Asbestos Content
Gray Flooring	ND
White Fibrous Material	ND
Composite Non-Asbestos Content:	10% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: 3-BWT-1W, Ceramic wall tile, floor 3, pale pink ceramic tile on women's restroom wall Lab ID-Version‡: 12958500-1

Sample Layers	Asbestos Content
Pink Ceramic Tile	ND
White Compound	ND
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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ASBESTOS PLM REPORT

Location: 3-BWT-2W, Ceramic wall tile, floor 3, pale pink ceramic tile on women's restroom wall

Lab ID-Version‡: 12958501-1

Sample Layers	Asbestos Content
Pink Ceramic Tile	ND
White Compound	ND
Sample Composite Homogeneity:	Moderate

Location: 3-BFT-1W, Ceramic floor tile, floor 3, beige and white ceramic wall tile on women's restroom floor

Lab ID-Version‡: 12958502-1

Sample Layers	Asbestos Content
Beige Ceramic Tile	ND
Gray Mortar	ND
Sample Composite Homogeneity:	Moderate

Location: 3-BFT-2W, Ceramic floor tile, floor 3, beige and white ceramic wall tile on women's restroom floor

Lab ID-Version‡: 12958503-1

Sample Layers	Asbestos Content
Beige Ceramic Tile	ND
Gray Mortar	ND
Sample Composite Homogeneity:	Moderate

Location: 3-BWT-1M, Ceramic wall tile, floor 3, pale blue ceramic tile on men's restroom wall

Lab ID-Version‡: 12958504-1

Sample Layers	Asbestos Content
Pink Ceramic Tile	ND
White Compound	ND
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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ASBESTOS PLM REPORT

Location: 3-BWT-2M, Ceramic wall tile, floor 3, pale blue ceramic tile on men's restroom wall

Lab ID-Version‡: 12958505-1

Sample Layers	Asbestos Content
Pink Ceramic Tile	ND
White Compound	ND
Sample Composite Homogeneity:	Moderate

Location: 3-BFT-1M, Ceramic floor tile, floor 3, gray and white ceramic tile on men's restroom floor

Lab ID-Version‡: 12958506-1

Sample Layers	Asbestos Content
Gray Ceramic Tile	ND
Gray Mortar	ND
Sample Composite Homogeneity:	Moderate

Location: 3-BFT-2M, Ceramic floor tile, floor 3, gray and white ceramic tile on men's restroom floor

Lab ID-Version‡: 12958507-1

Sample Layers	Asbestos Content
Gray Ceramic Tile	ND
Gray Mortar	ND
Sample Composite Homogeneity:	Moderate

Location: 3-Mirror-1, Mirror mastic, floor 3, black mastic behind mirrors

Lab ID-Version‡: 12958508-1

Sample Layers	Asbestos Content
Black Mastic	10% Chrysotile
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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ASBESTOS PLM REPORT

Location: 3-Mirror-2, Mirror mastic, floor 3, black mastic behind mirrors Lab ID-Version‡: 12958509-1

Sample Layers	Asbestos Content
Black Mastic	10% Chrysotile
Sample Composite Homogeneity:	Good

Location: HVAC-1, HVAC duct mastic, beige mastic on HVAC ducts above ceiling throughout all floors Lab ID-Version‡: 12958510-1

Sample Layers	Asbestos Content
Beige Mastic	ND
Sample Composite Homogeneity:	Good

Location: HVAC-2, HVAC duct mastic, beige mastic on HVAC ducts above ceiling throughout all floors Lab ID-Version‡: 12958511-1

Sample Layers	Asbestos Content
Beige Mastic	ND
Sample Composite Homogeneity:	Good

Location: 2-DW-1, Drywall system, floor 2, white drywall system on walls throughout Lab ID-Version‡: 12958512-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Off-White Compound with Paint	2% Chrysotile
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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ASBESTOS PLM REPORT

Location: 2-DW-2, Drywall system, floor 2, white drywall system on walls throughout Lab ID-Version‡: 12958513-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Off-White Joint Compound	2% Chrysotile
Cream Tape	ND
White Compound with Paint	ND
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Comments: Composite content provided for this analysis has been performed by following the NESHAP guidelines.

Location: 2-DW-3, Drywall system, floor 2, white drywall system on walls throughout Lab ID-Version‡: 12958514-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
White Joint Compound	ND
Cream Tape	ND
White Compound with Paint	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: 2-DW-4, Drywall system, floor 2, white drywall system on walls throughout Lab ID-Version‡: 12958515-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
White Joint Compound	ND
Cream Tape	ND
White Compound with Paint	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: 2-DW-5, Drywall system, floor 2, white drywall system on walls throughout Lab ID-Version‡: 12958516-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Off-White Joint Compound	2% Chrysotile
Cream Tape	ND
Off-White Compound with Paint	2% Chrysotile
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Comments: Composite asbestos content provided is only for Drywall/Joint compound. Composite content provided for this analysis has been performed by following the NESHAP guidelines.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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ASBESTOS PLM REPORT

Location: 2-DW-6, Drywall system, floor 2, white drywall system on walls throughout Lab ID-Version‡: 12958517-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Off-White Joint Compound	2% Chrysotile
Cream Tape	ND
Off-White Compound with Paint	2% Chrysotile
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Comments: Composite asbestos content provided is only for Drywall/Joint compound. Composite content provided for this analysis has been performed by following the NESHAP guidelines.

Location: 2-DW-7, Drywall system, floor 2, white drywall system on walls throughout Lab ID-Version‡: 12958518-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
White Compound with Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: 2-BB-1, Vinyl baseboard, floor 2, blue vinyl baseboard yellow mastic on walls

Lab ID-Version‡: 12958519-1

Sample Layers	Asbestos Content
Blue Baseboard	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 2-BB-2, Vinyl baseboard, floor 2, blue vinyl baseboard yellow mastic on walls

Lab ID-Version‡: 12958520-1

Sample Layers	Asbestos Content
Blue Baseboard	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: 2-YCM-1, Carpet mastic, floor 2, yellow mastic under brown carpet and gray pad throughou

Lab ID-Version‡: 12958521-1

Sample Layers	Asbestos Content
Brown Carpet	ND
Yellow Mastic	ND
Gray Fibrous Material	ND
Composite Non-Asbestos Content:	60% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: 2-YCM-2, Carpet mastic, floor 2, yellow mastic under brown carpet and gray pad throughou

Lab ID-Version‡: 12958522-1

Sample Layers	Asbestos Content
Brown Carpet	ND
Yellow Mastic	ND
Gray Fibrous Material	ND
Composite Non-Asbestos Content:	60% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: 2-BWT-1W, Ceramic wall tile, floor 2, pale pink ceramic tile on women's restroom wall

Lab ID-Version‡: 12958523-1

Sample Layers	Asbestos Content
Pink Ceramic Tile	ND
White Compound	ND
Sample Composite Homogeneity:	Moderate

Location: 2-BWT-2W, Ceramic wall tile, floor 2, pale pink ceramic tile on women's restroom wall

Lab ID-Version‡: 12958524-1

Sample Layers	Asbestos Content
Pink Ceramic Tile	ND
White Compound	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: 2-BFT-1W, Ceramic floor tile, floor 2, beige and white ceramic tile on women's restroom floor

Lab ID-Version‡: 12958525-1

Sample Layers	Asbestos Content
Beige Ceramic Tile	ND
Gray Grout	ND
Gray Mortar	ND
Sample Composite Homogeneity:	Poor

Location: 2-BFT-2W, Ceramic floor tile, floor 2, beige and white ceramic tile on women's restroom floor

Lab ID-Version‡: 12958526-1

Sample Layers	Asbestos Content
Beige Ceramic Tile	ND
Gray Grout	ND
Gray Mortar	ND
Sample Composite Homogeneity:	Poor

Location: 2-BWT-1M, Ceramic wall tile, floor 2, cream tile on men's restroom wall

Lab ID-Version‡: 12958527-1

Sample Layers	Asbestos Content
Pink Ceramic Tile	ND
White Compound	ND
Sample Composite Homogeneity:	Moderate

Location: 2-BWT-2M, Ceramic wall tile, floor 2, cream tile on men's restroom wall

Lab ID-Version‡: 12958528-1

Sample Layers	Asbestos Content
Pink Ceramic Tile	ND
White Compound	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: 2-BFT-1M, Ceramic wall tile, floor 2, gray and white ceramic tile on men's restroom floor

Lab ID-Version‡: 12958529-1

Sample Layers	Asbestos Content
Gray Ceramic Tile	ND
Gray Grout	ND
Gray Mortar	ND
Sample Composite Homogeneity:	Poor

Location: 2-BFT-2M, Ceramic wall tile, floor 2, gray and white ceramic tile on men's restroom floor

Lab ID-Version‡: 12958530-1

Sample Layers	Asbestos Content
Gray Ceramic Tile	ND
Gray Grout	ND
Gray Mortar	ND
Sample Composite Homogeneity:	Poor

Location: 2-BVFT-1, Vinyl floor tile, floor 2, beige vinyl floor tile and black mastic in kitchen/lounge area

Lab ID-Version‡: 12958531-1

Sample Layers	Asbestos Content
Beige Floor Tile	ND
Black/Yellow Mastic	3% Chrysotile
Sample Composite Homogeneity:	Poor

Location: 2-BVFT-2, Vinyl floor tile, floor 2, beige vinyl floor tile and black mastic in kitchen/lounge area

Lab ID-Version‡: 12958532-1

Sample Layers	Asbestos Content
Beige Floor Tile	ND
Black/Yellow Mastic	3% Chrysotile
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: 2-GVFT-1, Vinyl floor tile, floor 2, gray vinyl floor tile and yellow mastic in kitchen/lounge area

Lab ID-Version‡: 12958533-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Yellow Mastic	ND
Gray Leveling Compound	ND
Sample Composite Homogeneity:	Poor

Location: 2-GVFT-2, Vinyl floor tile, floor 2, gray vinyl floor tile and yellow mastic in kitchen/lounge area

Lab ID-Version‡: 12958534-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 2-CBW-1, Cinderblock wall, floor 2, gray painted cinderblock walls throughout

Lab ID-Version‡: 12958535-1

Sample Layers	Asbestos Content
Gray Stucco with Paint	ND
Sample Composite Homogeneity:	Good

Location: 2-CBW-2, Cinderblock wall, floor 2, gray painted cinderblock walls throughout

Lab ID-Version‡: 12958536-1

Sample Layers	Asbestos Content
Gray Stucco with Paint	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: 2-TBB-1, Vinyl baseboard, floor 2, tan tall vinyl baseboard and yellow/brown mastic on walls

Lab ID-Version‡: 12958537-1

Sample Layers	Asbestos Content
Tan Baseboard	ND
Multicolored Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 2-TBB-2, Vinyl baseboard, floor 2, tan tall vinyl baseboard and yellow/brown mastic on walls

Lab ID-Version‡: 12958538-1

Sample Layers	Asbestos Content
Tan Baseboard	ND
Multicolored Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 2-CT-1, Ceiling tile, floor 2, white ceiling tiles throughout

Lab ID-Version‡: 12958539-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 40% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 2-CT-2, Ceiling tile, floor 2, white ceiling tiles throughout

Lab ID-Version‡: 12958540-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 40% Glass Fibers
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: 2-Sink, Sink under coat, floor 2, black undercoat on break area sink Lab ID-Version‡: 12958541-1

Sample Layers	Asbestos Content
Black Sink Undercoating	5% Chrysotile
Sample Composite Homogeneity:	Good

Location: 1-DW-1, Drywall system, floor 1, white drywall system on walls throughout Lab ID-Version‡: 12958542-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
White Compound with Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: 1-DW-2, Drywall system, floor 1, white drywall system on walls throughout Lab ID-Version‡: 12958543-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
White Joint Compound	ND
Cream Tape	ND
White Compound with Paint	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: 1-DW-3, Drywall system, floor 1, white drywall system on walls throughout Lab ID-Version‡: 12958544-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
White Joint Compound	ND
Cream Tape	ND
White Compound with Paint	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: 1-DW-4, Drywall system, floor 1, white drywall system on walls throughout Lab ID-Version‡: 12958545-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
White Joint Compound	ND
Cream Tape	ND
White Compound with Paint	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: 1-DW-5, Drywall system, floor 1, white drywall system on walls throughout Lab ID-Version‡: 12958546-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
White Compound with Paint	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: 1-DW-6, Drywall system, floor 1, white drywall system on walls throughout Lab ID-Version‡: 12958547-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
White Joint Compound	ND
Cream Tape	ND
White Compound with Paint	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

Location: 1-DW-7, Drywall system, floor 1, white drywall system on walls throughout Lab ID-Version‡: 12958548-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
White Joint Compound	ND
Cream Tape	ND
White Compound with Paint	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: 1-CSM-1, Carpet square mastic, floor 1, yellow and black mastic under blue carpet squares in entry

Lab ID-Version‡: 12958549-1

Sample Layers	Asbestos Content
Brown Carpet	ND
Black/Yellow Mastic	2% Chrysotile
White Leveling Compound	ND
Composite Non-Asbestos Content:	60% Synthetic Fibers
Sample Composite Homogeneity:	Poor

Location: 1-CSM-2, Carpet square mastic, floor 1, yellow and black mastic under blue carpet squares in entry

Lab ID-Version‡: 12958550-1

Sample Layers	Asbestos Content
Brown Carpet	ND
Black/Yellow Mastic	2% Chrysotile
White Leveling Compound	ND
Composite Non-Asbestos Content:	60% Synthetic Fibers
Sample Composite Homogeneity:	Poor

Location: 1-CM-1, Carpet mastic, floor 1, yellow and black mastic under brown roll out carpet in offices

Lab ID-Version‡: 12958551-1

Sample Layers	Asbestos Content
Brown Carpet	ND
Black/Yellow Mastic	2% Chrysotile
Composite Non-Asbestos Content:	60% Synthetic Fibers
Sample Composite Homogeneity:	Poor

Location: 1-CM-2, Carpet mastic, floor 1, yellow and black mastic under brown roll out carpet in offices

Lab ID-Version‡: 12958552-1

Sample Layers	Asbestos Content
Brown Carpet	ND
Black/Yellow Mastic	2% Chrysotile
Composite Non-Asbestos Content:	60% Synthetic Fibers
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: 1-ECM-1, Floor mastic, floor 1, black mastic on electrical closet floor, next to elevator and under tile

Lab ID-Version‡: 12958553-1

Sample Layers	Asbestos Content
Black Mastic	6% Chrysotile
Sample Composite Homogeneity:	Good

Location: 1-ECM-2, Floor mastic, floor 1, black mastic on electrical closet floor, next to elevator and under tile

Lab ID-Version‡: 12958554-1

Sample Layers	Asbestos Content
Black Mastic	6% Chrysotile
Sample Composite Homogeneity:	Good

Location: 1-BWT-1W, Ceramic wall tile, floor 1, pale pink ceramic tile on women's restroom wall

Lab ID-Version‡: 12958555-1

Sample Layers	Asbestos Content
Pink Ceramic Tile	ND
Yellow Adhesive	ND
White Compound	ND
Sample Composite Homogeneity:	Poor

Location: 1-BWT-2W, Ceramic wall tile, floor 1, pale pink ceramic tile on women's restroom wall

Lab ID-Version‡: 12958556-1

Sample Layers	Asbestos Content
Pink Ceramic Tile	ND
Yellow Adhesive	ND
White Compound	ND
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: 1-BFT-1W, Ceramic floor tile, floor 1, beige and white ceramic tile on women's restroom floor

Lab ID-Version‡: 12958557-1

Sample Layers	Asbestos Content
Beige Ceramic Tile	ND
Gray Mortar	ND
Gray Sealant	ND
Sample Composite Homogeneity:	Poor

Location: 1-BFT-2W, Ceramic floor tile, floor 1, beige and white ceramic tile on women's restroom floor

Lab ID-Version‡: 12958558-1

Sample Layers	Asbestos Content
Beige Ceramic Tile	ND
Gray Mortar	ND
Gray Sealant	ND
Sample Composite Homogeneity:	Poor

Location: 1-BWT-1M, Ceramic wall tile, floor 1, cream ceramic tile on men's restroom wall

Lab ID-Version‡: 12958559-1

Sample Layers	Asbestos Content
Cream Ceramic Tile	ND
Sample Composite Homogeneity:	Good

Location: 1-BWT-2M, Ceramic wall tile, floor 1, cream ceramic tile on men's restroom wall

Lab ID-Version‡: 12958560-1

Sample Layers	Asbestos Content
Cream Ceramic Tile	ND
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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ASBESTOS PLM REPORT

Location: 1-BFT-1M, Ceramic wall tile, floor 1, gray and white ceramic tile on men's restroom floor

Lab ID-Version‡: 12958561-1

Sample Layers	Asbestos Content
White Ceramic Tile	ND
Gray Mortar	ND
Gray Sealant	ND
Sample Composite Homogeneity:	Poor

Location: 1-BFT-2M, Ceramic wall tile, floor 1, gray and white ceramic tile on men's restroom floor

Lab ID-Version‡: 12958562-1

Sample Layers	Asbestos Content
White Ceramic Tile	ND
Gray Mortar	ND
Gray Sealant	ND
Sample Composite Homogeneity:	Poor

Location: 1-TBB-1, Vinyl baseboard, floor 1, tan vinyl baseboard and yellow mastic on entry walls

Lab ID-Version‡: 12958563-1

Sample Layers	Asbestos Content
Tan Baseboard	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 1-TBB-2, Vinyl baseboard, floor 1, tan vinyl baseboard and yellow mastic on entry walls

Lab ID-Version‡: 12958564-1

Sample Layers	Asbestos Content
Tan Baseboard	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: 1-GBB-1, Vinyl baseboard, floor 1, gray vinyl baseboard and yellow mastic on office walls

Lab ID-Version‡: 12958565-1

Sample Layers	Asbestos Content
Gray Baseboard	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 1-GBB-2, Vinyl baseboard, floor 1, gray vinyl baseboard and yellow mastic on office walls

Lab ID-Version‡: 12958566-1

Sample Layers	Asbestos Content
Gray Baseboard	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 1-SCT-1, Ceiling tile, floor 1, square ceiling tiles throughout entry ceiling

Lab ID-Version‡: 12958567-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 40% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 1-SCT-2, Ceiling tile, floor 1, square ceiling tiles throughout entry ceiling

Lab ID-Version‡: 12958568-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 40% Glass Fibers
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: 1-RCT-1, Ceiling tile, floor 1, rectangular ceiling tiles throughout office ceiling

Lab ID-Version‡: 12958569-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 40% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 1-RCT-2, Ceiling tile, floor 1, rectangular ceiling tiles throughout office ceiling

Lab ID-Version‡: 12958570-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 40% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 1-CBW-1, Cinderblock walls, floor 1, gray cinderblock walls

Lab ID-Version‡: 12958571-1

Sample Layers	Asbestos Content
Gray Stucco with Paint	ND
Sample Composite Homogeneity:	Good

Location: 1-CBW-2, Cinderblock walls, floor 1, gray cinderblock walls

Lab ID-Version‡: 12958572-1

Sample Layers	Asbestos Content
Gray Stucco with Paint	ND
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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4955 Yarrow Street , Arvada, CO 80002
(800) 651-4802 Fax (623) 780-7695 www.emlab.com

Client: Enviro Nova
C/O: Mr. Basil Falcone
Re: 21-186; 2118 Milvia Street, Berkeley, CA

Date of Sampling: 08-13-2021
Date of Receipt: 08-13-2021
Date of Report: 08-17-2021

ASBESTOS PLM REPORT

Location: 1-VFT-1, Vinyl floor tile, floor 1, beige vinyl floor tile and black/yellow mastic in hall sink room

Lab ID-Version‡: 12958573-1

Sample Layers	Asbestos Content
Beige Floor Tile	ND
Black/Yellow Mastic	3% Chrysotile
Sample Composite Homogeneity:	Poor

Location: 1-VFT-2, Vinyl floor tile, floor 1, beige vinyl floor tile and black/yellow mastic in hall sink room

Lab ID-Version‡: 12958574-1

Sample Layers	Asbestos Content
Beige Floor Tile	ND
Black/Yellow Mastic	3% Chrysotile
Sample Composite Homogeneity:	Poor

Location: 1-BBB-1, Vinyl baseboard, floor 1, brown/orange vinyl baseboard and yellow mastic in electrical closet

Lab ID-Version‡: 12958575-1

Sample Layers	Asbestos Content
Brown Baseboard	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: 1-BBB-2, Vinyl baseboard, floor 1, brown/orange vinyl baseboard and yellow mastic in electrical closet

Lab ID-Version‡: 12958576-1

Sample Layers	Asbestos Content
Brown Baseboard	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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Client: Enviro Nova
C/O: Mr. Basil Falcone
Re: 21-186; 2118 Milvia Street, Berkeley, CA

Date of Sampling: 08-13-2021
Date of Receipt: 08-13-2021
Date of Report: 08-17-2021

ASBESTOS PLM REPORT

Location: BE-WC-1M, Window caulk, building exterior, white window caulk on Milvia street

Lab ID-Version‡: 12958577-1

Sample Layers	Asbestos Content
White Caulk	ND
Sample Composite Homogeneity:	Good

Location: BE-WC-2M, Window caulk, building exterior, white window caulk on Milvia street

Lab ID-Version‡: 12958578-1

Sample Layers	Asbestos Content
White Caulk	ND
Sample Composite Homogeneity:	Good

Location: BE-WC-1C, Window caulk, building exterior, black window caulk on Center street

Lab ID-Version‡: 12958579-1

Sample Layers	Asbestos Content
Black Caulk	ND
Sample Composite Homogeneity:	Good

Location: BE-WC-2C, Window caulk, building exterior, black window caulk on Center street

Lab ID-Version‡: 12958580-1

Sample Layers	Asbestos Content
Black Caulk	ND
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Report for:

Mr. Basil Falcone
Enviro Nova
235 Montgomery Street
Suite 1105
San Francisco, CA 94104

Regarding: Project: 21-186; 2118 Milvia Street, Berkeley, CA
EML ID: 2709217

Approved by:

Approved Signatory
Amber Rutter

Dates of Analysis:
Asbestos-EPA 1000 point count: 08-30-2021

Service SOPs: Asbestos-EPA 1000 point count (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1262)
NVLAP Lab Code 500053-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

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Client: Enviro Nova
C/O: Mr. Basil Falcone
Re: 21-186; 2118 Milvia Street, Berkeley, CA

Date of Sampling: 08-13-2021
Date of Receipt: 08-13-2021
Date of Report: 08-30-2021

ASBESTOS POINT COUNT REPORT

Location:	3-DW-2 Drywall system, floor 3, white drywall system on walls throughout		
Total Points Counted:	1000		
Lab ID-Version‡:	13005847-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Off-White Compound	Chrysotile	8	0.8
Layer Totals:		8	0.8
White Drywall with Off-White Joint Compound Composite	Chrysotile	0	< 0.1
Layer Totals:		0	NA

Comments: Composite asbestos content provided is only for Drywall/Joint compound. Composite content provided for this analysis has been performed by following the NESHAP guidelines. Asbestos was detected, but no points counted in composite.

Location:	2-DW-1 Drywall system, floor 2, white drywall system on walls throughout		
Total Points Counted:	1000		
Lab ID-Version‡:	13005848-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Off-White Compound	Chrysotile	11	1.1
Layer Totals:		11	1.1

Location:	2-DW-2 Drywall system, floor 2, white drywall system on walls throughout		
Total Points Counted:	1000		
Lab ID-Version‡:	13005849-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
White Drywall with Off-White Joint Compound Composite	Chrysotile	1	0.1
Layer Totals:		1	0.1

Comments: Composite content provided for this analysis has been performed by following the NESHAP guidelines.

The analytical sensitivity is 1 asbestos point. The limit of detection is 1 asbestos point divided by the total number of points counted and multiplied by 100.

The results relate only to the items tested. Interpretation is left to the company and/or persons who conducted the field work. The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government.

All samples were received in acceptable condition unless otherwise noted. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.
Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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ACM BULK SAMI 002709217

* PLM Analysis

☐ Stop Analysis at First Positive
☒ Analyze All Samples
☐ Point Count Analysis (400-point)

Project Name/Address: 2118 Milvia Street, Berkeley CA			
Project #: 21-186	Sampled By: Brenna Deane		Sampling Date 8/13/21
Sample(s) Sent To: AsbestosTEM			Turn Around Time: **3-5 Days**
EMAIL TO:	☐ Basil Falcone bfalcone@environova.com	☒ John Adams jadams@environova.com	☒ William Morales wmorales@environova.com

HM#	Material Description: **ceiling tile**	
Sample ID	Sample Location & Material Location	Quantity:
3-CT-1	Floor 3, rectangular white ceiling tile throughout	
3-CT-2	Floor 3, rectangular white ceiling tile throughout	

HM#	Material Description: **vinyl baseboard**	
Sample ID	Sample Location & Material Location	Quantity:
3-BB-1	Floor 3, blue vinyl baseboard + white/yellow mastic throughout	
3-BB-2	Floor 3, blue vinyl baseboard + white/yellow mastic throughout	

HM#	Material Description: **carpet mastic**	
Sample ID	Sample Location & Material Location	Quantity:
3-YCM-1	Floor 3, yellow mastic under brown carpet + gray pad	
3-YCM-2	Floor 3, yellow mastic under brown carpet + gray pad	

HM#	Material Description: **drywall system**	
Sample ID	Sample Location & Material Location	Quantity:
3-DW-1	Floor 3, white drywall system on walls throughout	
3-DW-2	Floor 3, white drywall system on walls throughout	
3-DW-3	Floor 3, white drywall system on walls throughout	
3-DW-4	Floor 3, white drywall system on walls throughout	
3-DW-5	Floor 3, white drywall system on walls throughout	
3-DW-6	Floor 3, white drywall system on walls throughout	
3-DW-7	Floor 3, white drywall system on walls throughout	

Relinquished By: Brenna Deane Signature: Brenna Deane Date/Time: 8/13/21

Received By: _____ Signature: _____ Date/Time: 8/13/21 1402

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ACM BULK SAM

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☐ Point Count Analysis (400-point)

Project Name/Address: 2118 Milvia Street, Berkeley CA			
Project #: 21-186	Sampled By: Brenna Deane		Sampling Date 8/13/21
Sample(s) Sent To: AsbestosTEM			Turn Around Time: 3-5 Days
EMAIL TO:	☐ Basil Falcone bfalcone@environova.com	☒ John Adams jadams@environova.com	☒ William Morales wmorales@environova.com

HM#	Material Description: cinderblock + stucco	
Sample ID	Sample Location & Material Location	Quantity:
3-CBW-1	Floor 3, gray cinderblock wall + white stucco inside	
3-CBW-2	Floor 3, gray cinderblock wall + white stucco inside	
3-CBW-3	Floor 3, gray cinderblock wall + white stucco inside	
HM#	**Material Description: roofing material**	
Sample ID	**Sample Location & Material Location**	**Quantity:**
R-A	Roof, gray + black sheet roofing material throughout roof	
R-B	Roof, gray + black sheet roofing material throughout roof	
R-C	Roof, gray + black sheet roofing material throughout roof	
HM#	**Material Description: perimeter seal**	
Sample ID	**Sample Location & Material Location**	**Quantity:**
R-D	Roof, white seal material around perimeter of roof	
R-E	Roof, white seal material around perimeter of roof	
R-F	Roof, white seal material around perimeter of roof	
HM#	**Material Description: penetration mastic**	
Sample ID	**Sample Location & Material Location**	**Quantity:**
R-G	Roof, white/gray mastic at penetrations throughout	
R-H	Roof, white/gray mastic at penetrations throughout	
HM#	**Material Description patching material**	
Sample ID	**Sample Location & Material Location**	**Quantity:**
R-J	Roof, gray/black material on patches throughout	
R-K	Roof, gray/black material on patches throughout	

Relinquished By: Brenna Deane Signature: Brenna Deane Date/Time: 8/13/21

Received By: Signature: Date/Time: 8/13/21 1442

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Project Name/Address: 2118 Milvia Street, Berkeley CA			
Project #: 21-186	Sampled By: Brenna Deane		Sampling Date 8/13/21
Sample(s) Sent To: AsbestosTEM			Turn Around Time: **3-5 Days**
EMAIL TO:	☐ Basil Falcone bfalcone@environova.com	☒ John Adams jadams@environova.com	☒ William Morales wmorales@environova.com

HM#	Material Description: **exterior stucco**	
Sample ID	Sample Location & Material Location	Quantity:
R-M	Roof, gray stucco on building exterior	
R-N	Roof, gray stucco on building exterior	
R-O	Roof, gray stucco on building exterior	
BE-Stucco-1	Building Exterior, gray stucco throughout façade	
BE-Stucco-2	Building Exterior, gray stucco throughout façade	
BE-Stucco-3	Building Exterior, gray stucco throughout façade	
BE-Stucco-4	Building Exterior, gray stucco throughout façade	

HM#	Material Description: **HVAC mastic**	
Sample ID	Sample Location & Material Location	Quantity:
R-Q	Roof, black/gray mastic on HVAC units	
R-R	Roof, black/gray mastic on HVAC units	

HM#	Material Description: **vinyl floor tile**	
Sample ID	Sample Location & Material Location	Quantity:
3-VFT-1	Floor 3, red & beige vinyl floor tile on kitchen flor	
3-VFT-2	Floor 3, red & beige vinyl floor tile on kitchen flor	

HM#	Material Description **sink undercoat**	
Sample ID	Sample Location & Material Location	Quantity:
3-Sink	Floor 3, white undercoat on kitchen sink	

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Project Name/Address: 2118 Milvia Street, Berkeley CA			
Project #: 21-186	Sampled By: Brenna Deane		Sampling Date 8/13/21
Sample(s) Sent To: AsbestosTEM			Turn Around Time: **3-5 Days**
EMAIL TO:	☐ Basil Falcone bfalcone@environova.com	☒ John Adams jadams@environova.com	☒ William Morales wmorales@environova.com

HM#	Material Description: **balcony flooring material**	
Sample ID	Sample Location & Material Location	Quantity:
3B-Floor-1	Floor 3 Balcony, gray flooring material exterior	
3B-Floor-2	Floor 3 Balcony, gray flooring material exterior	

HM#	Material Description: **ceramic wall tile**	
Sample ID	Sample Location & Material Location	Quantity:
3-BWT-1W	Floor 3, pale pink ceramic tile on women's restroom wall	
3-BWT-2W	Floor 3, pale pink ceramic tile on women's restroom wall	

HM#	Material Description: **ceramic floor tile**	
Sample ID	Sample Location & Material Location	Quantity:
3-BFT-1W	Floor 3, beige + white ceramic tile on women's restroom floor	
3-BFT-2W	Floor 3, beige + white ceramic tile on women's restroom floor	

HM#	Material Description: **ceramic wall tile**	
Sample ID	Sample Location & Material Location	Quantity:
3-BWT-1M	Floor 3, pale blue ceramic tile on men's restroom wall	
3-BWT-2M	Floor 3, pale blue ceramic tile on men's restroom wall	

HM#	Material Description: **ceramic floor tile**	
Sample ID	Sample Location & Material Location	Quantity:
3-BFT-1M	Floor 3, gray + white ceramic tile on men's restroom floor	
3-BFT-2M	Floor 3, gray + white ceramic tile on men's restroom floor	

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Project Name/Address: 2118 Milvia Street, Berkeley CA			
Project #: 21-186	Sampled By: Brenna Deane		Sampling Date 8/13/21
Sample(s) Sent To: AsbestosTEM			Turn Around Time: 3-5 Days
EMAIL TO:	☐ Basil Falcone bfalcone@environova.com	☒ John Adams jadams@environova.com	☒ William Morales wmorales@environova.com

HM#	Material Description: mirror mastic	
Sample ID	Sample Location & Material Location	Quantity:
3-Mirror-1	Floor 3, black mastic behind mirrors	
3-Mirror-2	Floor 3, black mastic behind mirrors	

HM#	Material Description: HVAC duct mastic	
Sample ID	Sample Location & Material Location	Quantity:
HVAC-1	Beige mastic on HVAC ducts above ceiling throughout all floors	
HVAC-2	Beige mastic on HVAC ducts above ceiling throughout all floors	

HM#	Material Description: drywall system	
Sample ID	Sample Location & Material Location	Quantity:
2-DW-1	Floor 2, white drywall system on walls throughout	
2-DW-2	Floor 2, white drywall system on walls throughout	
2-DW-3	Floor 2, white drywall system on walls throughout	
2-DW-4	Floor 2, white drywall system on walls throughout	
2-DW-5	Floor 2, white drywall system on walls throughout	
2-DW-6	Floor 2, white drywall system on walls throughout	
2-DW-7	Floor 2, white drywall system on walls throughout	

HM#	Material Description vinyl baseboard	
Sample ID	Sample Location & Material Location	Quantity:
2-BB-1	Floor 2, blue vinyl baseboard yellow mastic on walls	
2-BB-2	Floor 2, blue vinyl baseboard yellow mastic on walls	

Relinquished By: Brenna Deane Signature: Brenna Deane Date/Time: 8/13/21

Received By: Signature: Date/Time: 8/13/21 14:42

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Project Name/Address: 2118 Milvia Street, Berkeley CA			
Project #: 21-186	Sampled By: Brenna Deane		Sampling Date 8/13/21
Sample(s) Sent To: AsbestosTEM			Turn Around Time: **3-5 Days**
EMAIL TO:	☐ Basil Falcone bfalcone@environova.com	☒ John Adams jadams@environova.com	☒ William Morales wmorales@environova.com

HM#	Material Description: carpet mastic	
Sample ID	Sample Location & Material Location	Quantity:
2-YCM-1	Floor 2, yellow mastic under brown carpet + gray pad throughout	
2-YCM-2	Floor 2, yellow mastic under brown carpet + gray pad throughout	

HM#	Material Description: ceramic wall tile	
Sample ID	Sample Location & Material Location	Quantity:
2-BWT-1W	Floor 2, pale pink ceramic tile on women's restroom wall	
2-BWT-2W	Floor 2, pale pink ceramic tile on women's restroom wall	

HM#	Material Description: ceramic floor tile	
Sample ID	Sample Location & Material Location	Quantity:
2-BFT-1W	Floor 2, beige + white ceramic tile on women's restroom floor	
2-BFT-2W	Floor 2, beige + white ceramic tile on women's restroom floor	

HM#	Material Description: ceramic wall tile	
Sample ID	Sample Location & Material Location	Quantity:
2-BWT-1M	Floor 2, cream ceramic tile on men's restroom wall	
2-BWT-2M	Floor 2, cream ceramic tile on men's restroom wall	

HM#	Material Description: ceramic wall tile	
Sample ID	Sample Location & Material Location	Quantity:
2-BFT-1M	Floor 2, gray + white ceramic tile on men's restroom floor	
2-BFT-2M	Floor 2, gray + white ceramic tile on men's restroom floor	

Relinquished By: Brenna Deane Signature: Brenna Deane Date/Time: 8/13/21

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Project Name/Address: 2118 Milvia Street, Berkeley CA			
Project #: 21-186	Sampled By: Brenna Deane		Sampling Date 8/13/21
Sample(s) Sent To: AsbestosTEM			Turn Around Time: 3-5 Days
EMAIL TO:	☐ Basil Falcone bfalcone@environova.com	☒ John Adams jadams@environova.com	☒ William Morales wmorales@environova.com

HM#	Material Description: vinyl floor tile	
Sample ID	Sample Location & Material Location	Quantity:
2-BVFT-1	Floor 2, beige vinyl floor tile + black mastic in kitchen / lounge area	
2-BVFT-2	Floor 2, beige vinyl floor tile + black mastic in kitchen / lounge area	

HM#	Material Description: vinyl floor tile	
Sample ID	Sample Location & Material Location	Quantity:
2-GVFT-1	Floor 2, gray vinyl floor tile + yellow mastic in kitchen / lounge area	
2-GVFT-2	Floor 2, gray vinyl floor tile + yellow mastic in kitchen / lounge area	

HM#	Material Description: cinderblock wall	
Sample ID	Sample Location & Material Location	Quantity:
2-CBW-1	Floor 2, gray painted cinderblock walls throughout	
2-CBW-2	Floor 2, gray painted cinderblock walls throughout	

HM#	Material Description: vinyl baseboard	
Sample ID	Sample Location & Material Location	Quantity:
2-TBB-1	Floor 2, tan tall vinyl baseboard + yellow/brown mastic on walls	
2-TBB-2	Floor 2, tan tall vinyl baseboard + yellow/brown mastic on walls	

HM#	Material Description ceiling tile	
Sample ID	Sample Location & Material Location	Quantity:
2-CT-1	Floor 2, white ceiling tiles throughout	
2-CT-2	Floor 2, white ceiling tiles throughout	

Relinquished By: Brenna Deane Signature: Brenna Deane Date/Time: 8/13/21

Received By: _____ Signature: _____ Date/Time: 8/13/21 1442

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☐ Stop Analysis at First Positive

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☐ Point Count Analysis (400-point)

Project Name/Address: 2118 Milvia Street, Berkeley CA			
Project #: 21-186	Sampled By: Brenna Deane		Sampling Date 8/13/21
Sample(s) Sent To: AsbestosTEM			Turn Around Time: **3-5 Days**
EMAIL TO:	☐ Basil Falcone bfalcone@environova.com	☒ John Adams jadams@environova.com	☒ William Morales wmorales@environova.com

HM#	Material Description: **sink undercoat**	
Sample ID	Sample Location & Material Location	Quantity:
2-Sink	Floor 2, black undercoat on break area sink	

HM#	Material Description: **drywall system**	
Sample ID	Sample Location & Material Location	Quantity:
1-DW-1	Floor 1, white drywall system on walls throughout	
1-DW-2	Floor 1, white drywall system on walls throughout	
1-DW-3	Floor 1, white drywall system on walls throughout	
1-DW-4	Floor 1, white drywall system on walls throughout	
1-DW-5	Floor 1, white drywall system on walls throughout	
1-DW-6	Floor 1, white drywall system on walls throughout	
1-DW-7	Floor 1, white drywall system on walls throughout	

HM#	Material Description: **carpet square mastic**	
Sample ID	Sample Location & Material Location	Quantity:
1-CSM-1	Floor 1, yellow + black mastic under blue carpet squares in entry	
1-CSM-2	Floor 1, yellow + black mastic under blue carpet squares in entry	

HM#	Material Description **carpet mastic**	
Sample ID	Sample Location & Material Location	Quantity:
1-CM-1	Floor 1, yellow + black mastic under brown roll out carpet in offices	
1-CM-2	Floor 1, yellow + black mastic under brown roll out carpet in offices	

Relinquished By: Brenna Deane Signature: Brenna Deane Date/Time: 8/13/21

Received By: _____ Signature: _____ Date/Time: 8/13/21 1442

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☒ Analyze All Samples

☐ Point Count Analysis (400-point)

Project Name/Address: 2118 Milvia Street, Berkeley CA			
Project #: 21-186	Sampled By: Brenna Deane		Sampling Date 8/13/21
Sample(s) Sent To: AsbestosTEM			Turn Around Time: **3-5 Days**
EMAIL TO:	☐ Basil Falcone bfalcone@environova.com	☒ John Adams jadams@environova.com	☒ William Morales wmorales@environova.com

HM#	Material Description: **floor mastic**	
Sample ID	Sample Location & Material Location	Quantity:
1-ECM-1	Floor 1, black mastic on electrical closet floor (next to elevator & under tile)	
1-ECM-2	Floor 1, black mastic on electrical closet floor (next to elevator & under tile)	

HM#	Material Description: **ceramic wall tile**	
Sample ID	Sample Location & Material Location	Quantity:
1-BWT-1W	Floor 1, pale pink ceramic tile on women's restroom wall	
1-BWT-2W	Floor 1, pale pink ceramic tile on women's restroom wall	

HM#	Material Description: **ceramic floor tile**	
Sample ID	Sample Location & Material Location	Quantity:
1-BFT-1W	Floor 1, beige + white ceramic tile on women's restroom floor	
1-BFT-2W	Floor 1, beige + white ceramic tile on women's restroom floor	

HM#	Material Description: **ceramic wall tile**	
Sample ID	Sample Location & Material Location	Quantity:
1-BWT-1M	Floor 1, cream ceramic tile on men's restroom wall	
1-BWT-2M	Floor 1, cream ceramic tile on men's restroom wall	

HM#	Material Description: **ceramic wall tile**	
Sample ID	Sample Location & Material Location	Quantity:
1-BFT-1M	Floor 1, gray + white ceramic tile on men's restroom floor	
1-BFT-2M	Floor 1, gray + white ceramic tile on men's restroom floor	

Relinquished By: Brenna Deane Signature: *Brenna Deane* Date/Time: 8/13/21

Received By: _____ Signature: _____ Date/Time: 8/13/21 1442

ENVIRONOVA
235 Montgomery Street, Suite 1105
San Francisco, CA 94104
Tel 415.883.7575
Fax 415.883.7475

ACM BULK SAM - PLM Analysis

002709217

☐ Stop Analysis at First Positive
☒ Analyze All Samples
☐ Point Count Analysis (400-point)

Project Name/Address: 2118 Milvia Street, Berkeley CA			
Project #: 21-186	Sampled By: Brenna Deane		Sampling Date 8/13/21
Sample(s) Sent To: AsbestosTEM			Turn Around Time: **3-5 Days**
EMAIL TO:	☐ Basil Falcone bfalcone@environova.com	☒ John Adams jadams@environova.com	☒ William Morales wmorales@environova.com

HM#	Material Description: **vinyl baseboard**	
Sample ID	Sample Location & Material Location	Quantity:
1-TBB-1	Floor 1, tan vinyl baseboard + yellow mastic on entry walls	
1-TBB-2	Floor 1, tan vinyl baseboard + yellow mastic on entry walls	

HM#	Material Description: **vinyl baseboard**	
Sample ID	Sample Location & Material Location	Quantity:
1-GBB-1	Floor 1, gray vinyl baseboard + yellow mastic on office walls	
1-GBB-2	Floor 1, gray vinyl baseboard + yellow mastic on office walls	

HM#	Material Description: **ceiling tile**	
Sample ID	Sample Location & Material Location	Quantity:
1-SCT-1	Floor 1, square ceiling tiles throughout entry ceiling	
1-SCT-2	Floor 1, square ceiling tiles throughout entry ceiling	

HM#	Material Description: **ceiling tile**	
Sample ID	Sample Location & Material Location	Quantity:
1-RCT-1	Floor 1, rectangular ceiling tiles throughout office ceiling	
1-RCT-2	Floor 1, rectangular ceiling tiles throughout office ceiling	

HM#	Material Description **cinderblock walls**	
Sample ID	Sample Location & Material Location	Quantity:
1-CBW-1	Floor 1, gray cinderblock walls	
1-CBW-2	Floor 1, gray cinderblock walls	

Relinquished By: Brenna Deane Signature: Brenna Deane Date/Time: 8/13/21

Received By: _____ Signature: _____ Date/Time: 8/13/21 1442

ENVIRONOVA
235 Montgomery Street, Suite 1105
San Francisco, CA 94104
Tel 415.883.7575
Fax 415.883.7475

ACM BULK SAMP 007709217

* PLM Analysis

☐ Stop Analysis at First Positive
☒ Analyze All Samples
☐ Point Count Analysis (400-point)

Project Name/Address: 2118 Milvia Street, Berkeley CA			
Project #: 21-186	Sampled By: Brenna Deane		Sampling Date 8/13/21
Sample(s) Sent To: AsbestosTEM			Turn Around Time: **3-5 Days**
EMAIL TO:	☐ Basil Falcone bfalcone@environova.com	☒ John Adams jadams@environova.com	☒ William Morales wmorales@environova.com

HM#	Material Description **vinyl floor tile**	
Sample ID	Sample Location & Material Location	Quantity:
1-VFT-1	Floor 1, beige vinyl floor tile + black/yellow mastic in hall sink room	
1-VFT-2	Floor 1, beige vinyl floor tile + black/yellow mastic in hall sink room	

HM#	Material Description **vinyl baseboard**	
Sample ID	Sample Location & Material Location	Quantity:
1-BBB-1	Floor 1, brown/orange vinyl baseboard + yellow mastic in electrical closet	
1-BBB-2	Floor 1, brown/orange vinyl baseboard + yellow mastic in electrical closet	

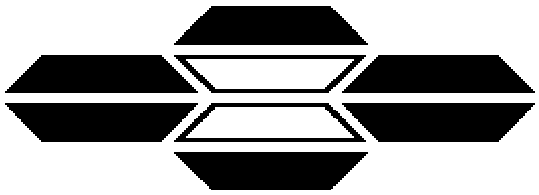
HM#	Material Description **window caulk**	
Sample ID	Sample Location & Material Location	Quantity:
BE-WC-1M	Building Exterior, white window caulk on Milvia Street	
BE-WC-2M	Building Exterior, white window caulk on Milvia Street	

HM#	Material Description **window caulk**	
Sample ID	Sample Location & Material Location	Quantity:
BE-WC-1C	Building Exterior, black window caulk on Center Street	
BE-WC-2C	Building Exterior, black window caulk on Center Street	

HM#	Material Description	
Sample ID	Sample Location & Material Location	Quantity:

Relinquished By: Brenna Deane Signature: Brenna Deane Date/Time: 8/13/21

Received By: _____ Signature: _____ Date/Time: 8/13/21 1441



ASBESTOS TEM LABORATORIES, INC.

EPA Interim Method
Polarized Light Microscopy
Analytical Report

Laboratory Job # 379265

3431 Ettie St.
Oakland, CA 94608
(510) 704-8930
FAX (510) 704-8429
www.asbestostemlabs.com

With Branch Offices Located At:
1350 FREEPORT BLVD. UNIT 104, SPARKS, NV 89431
Ph. (775) 359-3377

ASBESTOS TEM LABORATORIES, INC

CA ELAP
Lab No. 1866

NVLAP TESTING
NVLAP Lab Code: 101891-0
Oakland, CA

Jun-21-22

Basil Falcone
EnviroNova, LLC
235 Montgomery Street
San Francisco, CA 94104

RE: LABORATORY JOB # 379265
Polarized light microscopy analytical results for 3 bulk sample(s).
Job Site: 2118 Milvia St, Berkeley, CA
Job No.: 22-167

Enclosed please find the bulk material analytical results for one or more samples submitted for asbestos analysis. The analyses were performed in accordance with EPA Method 600/R-93/116 or 600/M4-82-020 for the determination of asbestos in bulk building materials by polarized light microscopy (PLM). Please note that while PLM analysis is commonly performed on non-friable and fine grained materials such as floor tiles and dust, the EPA method recognizes that PLM is subject to limitations. In these situations, accurate results may only be obtainable through the use of more sophisticated and accurate techniques such as transmission electron microscopy (TEM) or X-ray diffraction (XRD).

Prior to analysis, samples are logged-in and all data pertinent to the sample recorded. The samples are checked for damage or disruption of any chain-of-custody seals. A unique laboratory ID number is assigned to each sample. A hard copy log-in sheet containing all pertinent information concerning the sample is generated. This and all other relevant paper work are kept with the sample throughout the analytical procedures to assure proper analysis.

Each sample is opened in a class 100 HEPA negative air hood. A representative sampling of the material is selected and placed onto a glass microscope slide containing a drop of refractive index oil. The glass slide is placed under a polarizing light microscope where standard mineralogical techniques are used to analyze and quantify the various materials present, including asbestos. The data is then compiled into a standard report format and reviewed by the authorized signatory before being released to the client.

Sincerely Yours,

Lab Manager
ASBESTOS TEM LABORATORIES, INC.

Disclaimer - These results relate only to the samples tested as received and must not be reproduced, except in full, with the approval of the laboratory. Incorrect or illegible information supplied by the customer may adversely affect the validity of test results. This report must not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

Note: Test samples will be stored for three months after data of receipt, after which they will be properly disposed unless client makes other arrangements with the laboratory.

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Basil Falcone

Address: EnviroNova, LLC
235 Montgomery Street
San Francisco, CA 94104

Samples Indicated: 3
Reg. Samples Analyzed: 3
Split Layers Analyzed: 0

Report No. **379265**
Date Submitted: Jun-20-22
Date Reported: Jun-21-22

Job Site / No. 2118 Milvia St, Berkeley, CA
22-167

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
061622-2118-01A Lab ID # 1168-03675-001	**10-20%** **20-30%**	**Amosite** **Chrysotile**	**1)** None Detected **2)** 50-70% Bndr, Other m.p. **3)** Jun-16-22 **4)** Jun-21-22	White Door Insulation @ SW Stair, Fl. 3 Insulation-White
061622-2118-01B Lab ID # 1168-03675-002	**20-30%** **10-20%**	**Chrysotile** **Amosite**	**1)** None Detected **2)** 50-70% Bndr, Other m.p. **3)** Jun-16-22 **4)** Jun-21-22	White Door Insulation @ SW Stair, Fl. 2 Insulation-White
061622-2118-01C Lab ID # 1168-03675-003	**10-20%** **20-30%**	**Amosite** **Chrysotile**	**1)** None Detected **2)** 50-70% Bndr, Other m.p. **3)** Jun-16-22 **4)** Jun-21-22	White Door Insulation @ NE Stair, Fl. 2 Insulation-White
Lab ID #			**1)** **2)** **3)** **4)**	
Lab ID #			**1)** **2)** **3)** **4)**	
Lab ID #			**1)** **2)** **3)** **4)**	
Lab ID #			**1)** **2)** **3)** **4)**	
Lab ID #			**1)** **2)** **3)** **4)**	
Lab ID #			**1)** **2)** **3)** **4)**	
Lab ID #			**1)** **2)** **3)** **4)**	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Etienne Fang

ASBESTOS TEM LABORATORIES, INC. **3431 Ettie St., Oakland, CA 94608** **(510) 704-8930**
www.asbestostemlabs.com *With Offices in Reno, NV (775) 359-3377*

ATEM LABORATORIES CHAIN OF CUSTODY

CALIFORNIA: 3431 Ettie Street, Oakland, CA 94608 Phone (510) 704-8930 Fax (510) 704-8429
NEVADA: 1350 Freeport Blvd. #104, Sparks, NV 89431 Phone (775) 359-3377 Fax (775) 359-2798
You may also email this chain of custody to asbestosatemlabs.co@gmail.com

** denotes required field*

Company: ENVIRONOVA	Contact:* BASIL FALCONE, CHRISTA KHOURY	Phone:* 415-599-6657	Email:* bfalcone@environova.com
Address:* 235 MONTGOMERY ST, STE. 1105	City:* SAN FRANCISCO	State:* CA Zip: 94104	Email: ckhoury@environova.com
Job Site:* 2118 MILVIA ST, BERKELEY, CA	Job #: 22-167	PO #:	Email: bdeane@environova.com
Reporting*: ☒ Email ☐ Phone ☐ Fax ☐ Mail ☐ Pickup	Billing: ☐ Email ☐ Fax ☐ Mail ☐ Pre-Paid		Billing Email: ckhoury@environova.com

Results Due*: ☐ 2 HR ☐ 4 HR ☐ 6 HR ☐ 8 HR ☐ 24 HR ☒ 48 HR ☐ 3 DAY ☐ 5 DAY ☐ 10 DAY ☐ Hold Samples (Until ______) ☐ After Hours: ** ______

Asbestos Air: ☐ PCM NIOSH 7400 ☐ A ☐ B ☐ TEM AHERA ☐ TEM CARB Mod. AHERA ☐ TEM EPA Yamate Level II ☐ TEM NIOSH 7402 ☐ ISO 10312 ☐ ISO 13794 ☐ Sensitivity ______

Asbestos Bulk: ☒ PLM Standard (EPA 600/R-93-116) ☐ PLM 400 Point Count ☐ PLM 1000 PC ☐ PLM 400 PC Gravimetric Reduction ☐ PLM 1000 PC Grav. Red. ☐ TEM EPA Qualitative ☐ TEM EPA Quantitative

Asbestos Soils: ☐ CARB 435 Prep Only CARB 435 PLM ☐ 400 PC ☐ 800 PC ☐ 1000 PC ☐ 1200 PC ☐ EPA Soil Screening Qualitative ☐ TEM-NOA EPA/CARB Quantitative ☐ Erionite

Asbestos Dust: ☐ ASTM D-5755 Fiber Count ☐ ASTM D-5756 Wt. % ☐ ASTM D-5755 Mass ☐ ASTM D-6480 Dust Wipe ☐ Total Particulates (Gravimetric)

Asbestos Water: ☐ 100.2 Potable Drinking Water ☐ 100.1 Non Potable Water *note that 100.2 will be used for all water samples unless otherwise requested*

Lead/Silica: ☐ Lead Paint Chips EPA-SW-846 7000B ☐ Lead Dust Wipe EPA-SW-846 7000B ☐ Lead Air NIOSH 7082 ☐ Lead Soil EPA-SW-846 7000B Crystalline Silica Air (NIOSH 7500) ☐ Single Species ☐ All Species Crystalline Silica in Bulk (NIOSH 7500) ☐ Single Species ☐ All Species Respirable Crystalline Silica in Bulk (NIOSH 7500) ☐ Single Species ☐ All Species

Custom/Other: ☐ Custom Analysis ** ☐ TEM Chatfield (Semi-Quant) ☐ NIOSH 0500 ☐ NIOSH 0600 ☐ TTLC ☐ STLC ☐ TCLP

Special Instruct.: ☐ Composite ☐ Prep Only ☐ 8 Hour TWA Other **

Sample #*	Sample Type	Date Collected	Time On	Time Off	Total Time (min)	Flow Rate (lpm) On	Flow Rate (lpm) Off	Flow Rate (lpm) Average	Volume or Area Sampled	Hold Sample	Description*
61622-2118-01A	BULK	6/16/22								☐	white door insulation @ SW Stair, Fl. 3
61622-2118-01B	↓									☐	" @ SW Stair, Fl. 2
61622-2118-01C	↓	↓								☐	" @ NE Stair, Fl. 2
										☐	
										☐	
										☐	
										☐	
										☐	
										☐	
										☐	
										☐	

Submitted By* Jim Konimto / [signature]	Received By
Date/Time Submitted* 6/17/22 1500	Date/Time Received
Submitted By	Received By
Date/Time Submitted	Date/Time Received

** *For any special instructions, RUSH results or Custom Analysis, you must clarify these specifications AND, of more importance, contact us here at ATEM ahead of time to manage scheduling to meet your requests.* ***This includes dropping off samples for rush, same day analysis.*** *Drop off and processing of samples after hours cannot be accommodated without proper notification from you, and confirmation by ATEM staff. All samples will be held for 3 months from the date of receipt at ATEM. Additional sample storage time may be obtained through ATEM Customer Service.*

eurofins | EMLab P&K

Report for:

Mr. Basil Falcone
Enviro Nova
235 Montgomery Street
Suite 1105
San Francisco, CA 94104

Regarding: Project: 21-186; 2118 Milvia Street, Berkeley, CA
EML ID: 2709197

Approved by:

Laboratory Manager
Danny Li

Dates of Analysis:
Lead - Flame AA: 08-17-2021

Service SOPs: Lead - Flame AA (EM-BC-S-8443)
AIHA-LAP, LLC accredited service, Lab ID #178697

Eurofins EMLab P&K
17461 Derian Ave, Suite 100, Irvine, CA 92614
(866) 888-6653 Fax (623) 780-7695 www.emlab.com

Client: Enviro Nova
C/O: Mr. Basil Falcone
Re: 21-186; 2118 Milvia Street, Berkeley, CA

Date of Sampling: 08-13-2021
Date of Receipt: 08-13-2021
Date of Report: 08-17-2021

LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY

Location:	3-BFT-LW: Beige, white ceramic tile, floor 3, women's restroom floor	3-BWT-LW: Pale pink ceramic tile, floor 3, women's restroom wall	3-BFT-LM: Gray, white ceramic tile, floor 3, men's restroom floor	3-BWT-LM: Pale blue ceramic tile, floor 3, men's restroom wall
Comments (see below)	None	None	None	None
Lab ID-Version‡:	12958591-1	12958592-1	12958593-1	12958594-1
Analysis Date:	08/17/2021	08/17/2021	08/17/2021	08/17/2021
Sample type	Bulk sample	Bulk sample	Bulk sample	Bulk sample
Method*	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	38 ppm	37 ppm	40 ppm	40 ppm
Sample size	0.2613 grams	0.2703 grams	0.2528 grams	0.2473 grams
§Total Lead Result	< 38 ppm	53 ppm	< 40 ppm	46 ppm

Comments:

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA-LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Client: Enviro Nova
C/O: Mr. Basil Falcone
Re: 21-186; 2118 Milvia Street, Berkeley, CA

Date of Sampling: 08-13-2021
Date of Receipt: 08-13-2021
Date of Report: 08-17-2021

LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY

Location:	2-BFT-LW: Beige, pink ceramic tile, floor 2, women's restroom floor	2-BWT-LW: Pale pink ceramic tile, floor 2, women's restroom wall	2-BFT-LM: Gray, blue ceramic tile, floor 2, men's restroom floor	2-BWT-LM: Cream ceramic tile, floor 2, men's restroom wall
Comments (see below)	None	None	None	None
Lab ID-Version‡:	12958595-1	12958596-1	12958597-1	12958598-1
Analysis Date:	08/17/2021	08/17/2021	08/17/2021	08/17/2021
Sample type	Bulk sample	Bulk sample	Bulk sample	Bulk sample
Method*	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	36 ppm	39 ppm	39 ppm	39 ppm
Sample size	0.2748 grams	0.2541 grams	0.2591 grams	0.2565 grams
§Total Lead Result	< 36 ppm	< 39 ppm	< 39 ppm	< 39 ppm

Comments:

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA-LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Client: Enviro Nova
C/O: Mr. Basil Falcone
Re: 21-186; 2118 Milvia Street, Berkeley, CA

Date of Sampling: 08-13-2021
Date of Receipt: 08-13-2021
Date of Report: 08-17-2021

LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY

Location:	1-BFT-LW: Beige, pink ceramic tile, floor 1, women's restroom floor	1-BWT-LW: Pale pink ceramic tile, floor 1, women's restroom wall	1-BFT-LM: Gray, blue ceramic tile, floor 1, men's restroom floor	1-BWT-LM: Cream ceramic tile, floor 1, men's restroom wall
Comments (see below)	None	None	None	None
Lab ID-Version‡:	12958599-1	12958600-1	12958601-1	12958602-1
Analysis Date:	08/17/2021	08/17/2021	08/17/2021	08/17/2021
Sample type	Bulk sample	Bulk sample	Bulk sample	Bulk sample
Method*	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	38 ppm	37 ppm	40 ppm	40 ppm
Sample size	0.2609 grams	0.2723 grams	0.2502 grams	0.2506 grams
§Total Lead Result	< 38 ppm	< 37 ppm	60 ppm	< 40 ppm

Comments:

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA-LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins EMLab P&K
17461 Derian Ave, Suite 100, Irvine, CA 92614
(866) 888-6653 Fax (623) 780-7695 www.emlab.com

Client: Enviro Nova
C/O: Mr. Basil Falcone
Re: 21-186; 2118 Milvia Street, Berkeley, CA

Date of Sampling: 08-13-2021
Date of Receipt: 08-13-2021
Date of Report: 08-17-2021

LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY

Location:	L-R: Beige paint, roof, building exterior walls	3B-Rail-P: Brown paint, floor 3 balcony, railing	3-Yellow-P: Yellow paint, floor 3, accent walls	3-White-P: White paint, floor 3, walls throughout
Comments (see below)	None	None	None	None
Lab ID-Version‡:	12958603-1	12958604-1	12958605-1	12958606-1
Analysis Date:	08/17/2021	08/17/2021	08/17/2021	08/17/2021
Sample type	Paint Chip sample	Paint Chip sample	Paint Chip sample	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	37 ppm	59 ppm	37 ppm	40 ppm
Sample size	0.2728 grams	0.1692 grams	0.2677 grams	0.2524 grams
§Total Lead Result	58 ppm	< 59 ppm	< 37 ppm	< 40 ppm

Comments:

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA-LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Client: Enviro Nova
C/O: Mr. Basil Falcone
Re: 21-186; 2118 Milvia Street, Berkeley, CA

Date of Sampling: 08-13-2021
Date of Receipt: 08-13-2021
Date of Report: 08-17-2021

LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY

Location:	2-White-P: White paint, floor 2, walls throughout	2-Yellow-P: Yellow paint, floor 2, accent walls	1-RedBeam-P: Red paint, floor 1, painted beam at entry	1-Yellow-P: Yellow paint, floor 1, accent walls
Comments (see below)	None	None	None	None
Lab ID-Version‡:	12958607-1	12958608-1	12958609-1	12958610-1
Analysis Date:	08/17/2021	08/17/2021	08/17/2021	08/17/2021
Sample type	Paint Chip sample	Paint Chip sample	Paint Chip sample	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	38 ppm	38 ppm	37 ppm	40 ppm
Sample size	0.2635 grams	0.2628 grams	0.2739 grams	0.2513 grams
§Total Lead Result	< 38 ppm	640 ppm	490 ppm	< 40 ppm

Comments:

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA-LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins EMLab P&K
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Client: Enviro Nova
C/O: Mr. Basil Falcone
Re: 21-186; 2118 Milvia Street, Berkeley, CA

Date of Sampling: 08-13-2021
Date of Receipt: 08-13-2021
Date of Report: 08-17-2021

LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY

Location:	1-White-P: White paint, floor 1, walls throughout	1-Gray-P: Gray paint, floor 1, entry desks, sheetrock support	BE-Beige-P: Beige paint, building exterior, walls on Milvia St	BE-White-P: White paint, building exterior, entry and walls on Center St
Comments (see below)	A	A	A	A
Lab ID-Version‡:	12958611-1	12958612-1	12958613-1	12958614-1
Analysis Date:	08/17/2021	08/17/2021	08/17/2021	08/17/2021
Sample type	Paint Chip sample	Paint Chip sample	Paint Chip sample	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	40 ppm	38 ppm	40 ppm	38 ppm
Sample size	0.2517 grams	0.2628 grams	0.2497 grams	0.2598 grams
§Total Lead Result	< 40 ppm	< 38 ppm	160 ppm	230 ppm

Comments: A) The relative percent difference of the matrix duplicate pair was above control limits. The laboratory control sample and matrix blank were both within control limits and validated the batch.

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA-LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

ENVIRONOVA
Environmental Health & Safety Management
235 Montgomery Street, Suite 1105
San Francisco, CA 94104
Tel 415.883.7575
Fax 415.883.7475

LEAD BULK DA 002709197

* Lead Analysis
- Flame AA (EPA 7420)

PAGE ___ OF ___

Project Name/Address: 2118 Milvia Street, Berkeley CA
Project #: 21-186 Sampled By: Brenna Deane Sampling Date: 8/13/21
Sample(s) Sent To: AsbestosTEM **Turn Around Time:** **Rush** ☐ **24Hrs** ☐ **3-5 Days** ☒
****EMAIL REPORT TO:** ☒ Basil Falcone bfalcone@environova.com ☒ John Adams jadams@environova.com
☐ William Morales wmorales@environova.com

Sample ID	Material Description and Sample Location						Quantity
L-R	Color:	Beige	Material:	Paint	Composite Sample:	Y/N:	
	Sample Location: Roof, Building Exterior Walls						
3B-Rail-P	Color:	Brown	Material:	Paint	Composite Sample:	Y/N:	
	Sample Location: Floor 3 Balcony, Railing						
3-BFT-LW	Color:	Beige, white	Material:	Ceramic tile	Composite Sample:	Y/N:	
	Sample Location: Floor 3, Women's restroom floor						
3-BWT-LW	Color:	Pale pink	Material:	Ceramic tile	Composite Sample:	Y/N:	
	Sample Location: Floor 3, women's restroom wall						
3-BFT-LM	Color:	Gray, white	Material:	Ceramic tile	Composite Sample:	Y/N:	
	Sample Location: Floor 3, men's restroom floor						
3-BWT-LM	Color:	Pale blue	Material:	Ceramic tile	Composite Sample:	Y/N:	
	Sample Location: Floor 3, men's restroom wall						
3-Yellow-P	Color:	Yellow	Material:	Paint	Composite Sample:	Y/N:	
	Sample Location: Floor 3, accent walls						

Relinquished By: Brenna Deane **Signature:** Brenna Deane **Date/Time:** 8/13/21

Received By: _____ **Signature:** _____ **Date/Time:** 8/13/21

ENVIRONOVA
Environmental Health & Safety Management
235 Montgomery Street, Suite 1105
San Francisco, CA 94104
Tel 415.883.7575
Fax 415.883.7475

LEAD BULK

002709197

* Lead Analysis
- Flame AA (EPA 7420)

PAGE ___ OF ___

Project Name/Address: 2118 Milvia Street, Berkeley CA
Project #: 21-186 Sampled By: Brenna Deane Sampling Date: 8/13/21
Sample(s) Sent To: AsbestosTEM Turn Around Time: Rush ☐ 24Hrs ☐ 3-5 Days ☒
**EMAIL REPORT TO: ☒ Basil Falcone bfalcone@environova.com ☒ John Adams jadams@environova.com
☐ William Morales wmorales@environova.com

Sample ID	Material Description and Sample Location						Quantity
3-White-P	Color:	white	Material:	paint	Composite Sample:	Y/N:	
	Sample Location: Floor 3, walls throughout						
2-BFT-LW	Color:	Beige, pink	Material:	Ceramic tile	Composite Sample:	Y/N:	
	Sample Location: Floor 2, women's restroom floor						
2-BWT-LW	Color:	Pale pink	Material:	Ceramic tile	Composite Sample:	Y/N:	
	Sample Location: Floor 2, women's restroom wall						
2-BFT-LM	Color:	Gray, blue	Material:	Ceramic tile	Composite Sample:	Y/N:	
	Sample Location: Floor 2, men's restroom floor						
2-BWT-LM	Color:	Cream	Material:	Ceramic tile	Composite Sample:	Y/N:	
	Sample Location: Floor 2, men's restroom wall						
2-White-P	Color:	White	Material:	Paint	Composite Sample:	Y/N:	
	Sample Location: Floor 2, walls throughout						
2-Yellow-P	Color:	Yellow	Material:	Paint	Composite Sample:	Y/N:	
	Sample Location: Floor 2, accent walls						

Relinquished By: Brenna Deane Signature: Brenna Deane Date/Time: 8/13/21

Received By: _____ Signature: _____ Date/Time: 8/13/21

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LEAD BULK D

002709197

* Lead Analysis
- Flame AA (EPA 7420)

PAGE ___ OF ___

Project Name/Address: 2118 Milvia Street, Berkeley CA
Project #: 21-186 Sampled By: Brenna Deane Sampling Date: 8/13/21
Sample(s) Sent To: AsbestosTEM Turn Around Time: Rush ☐ 24Hrs ☐ 3-5 Days ☒
**EMAIL REPORT TO: ☒ Basil Falcone bfalcone@environova.com ☒ John Adams jadams@environova.com
☐ William Morales wmorales@environova.com

Sample ID	Material Description and Sample Location						Quantity
1-BFT-LW	Color:	Beige, pink	Material:	Ceramic tile	Composite Sample:	Y/N:	
	Sample Location: Floor 1, women's restroom floor						
1-BWT-LW	Color:	Pale pink	Material:	Ceramic tile	Composite Sample:	Y/N:	
	Sample Location: Floor 1, women's restroom wall						
1-BFT-LM	Color:	Gray, blue	Material:	Ceramic tile	Composite Sample:	Y/N:	
	Sample Location: Floor 1, men's restroom floor						
1-BWT-LM	Color:	Cream	Material:	Ceramic tile	Composite Sample:	Y/N:	
	Sample Location: Floor 1, men's restroom wall						
1-RedBeam-P	Color:	Red	Material:	Paint	Composite Sample:	Y/N:	
	Sample Location: Floor 1, painted beams at entry						
1-Yellow-P	Color:	Yellow	Material:	Paint	Composite Sample:	Y/N:	
	Sample Location: Floor 1, accent walls						
1-White-P	Color:	White	Material:	Paint	Composite Sample:	Y/N:	
	Sample Location: Floor 1, walls throughout						

Relinquished By: Brenna Deane Signature: Brenna Deane Date/Time: 8/13/21

Received By: _____ Signature: _____ Date/Time: 8/3/21

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Environmental Health & Safety Management

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San Francisco, CA 94104
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002709197

LEAD BULK DA

* Lead Analysis
- Flame AA (EPA 7420)

PAGE __ OF __

Project Name/Address: 2118 Milvia Street, Berkeley CA
Project #: 21-186 Sampled By: Brenna Deane Sampling Date: 8/13/21
Sample(s) Sent To: AsbestosTEM Turn Around Time: Rush ☐ 24Hrs ☐ 3-5 Days ☒
**EMAIL REPORT TO: ☒ Basil Falcone bfalcone@environova.com ☒ John Adams jadams@environova.com
☐ William Morales wmorales@environova.com

Sample ID	Material Description and Sample Location						Quantity
1-Gray-P	Color:	Gray	Material:	paint	Composite Sample:	Y/N:	
	Sample Location: Floor 1, Entry Desks (sheetrock support)						
BE-Beige-P	Color:	Beige	Material:	Paint	Composite Sample:	Y/N:	
	Sample Location: Building Exterior, Walls on Milvia St						
BE-White-P	Color:	White	Material:	Paint	Composite Sample:	Y/N:	
	Sample Location: Building Exterior, Entry & Walls on Center St						
	Color:		Material:		Composite Sample:	Y/N:	
	Sample Location:						
	Color:		Material:		Composite Sample:	Y/N:	
	Sample Location:						
	Color:		Material:		Composite Sample:	Y/N:	
	Sample Location:						
	Color:		Material:		Composite Sample:	Y/N:	
	Sample Location:						

Relinquished By: Brenna Deane Signature: Brenna Deane Date/Time: 8/13/21

Received By: Signature: Date/Time: 8/13/21

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 2108723

Report Created for: EnviroNova

1116 S Amphlett Blvd; Suite 1
San Mateo, CA 94402

Project Contact: Basil Falcone
Project P.O.:
Project: 21-186; 2118 Milvia Street, Berkely CA

Project Received: 08/13/2021

Analytical Report reviewed & approved for release on 08/23/2021 by:

Yen Cao
Project Manager

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CA ELAP 1644 ♦ NELAP 4033 ORELAP

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"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

Glossary of Terms & Qualifier Definitions

Client: EnviroNova
Project: 21-186; 2118 Milvia Street, Berkely CA
WorkOrder: 2108723

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CPT	Consumer Product Testing not NELAP Accredited
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
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LQL	Lowest Quantitation Level
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
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Glossary of Terms & Qualifier Definitions

Client: EnviroNova
Project: 21-186; 2118 Milvia Street, Berkely CA
WorkOrder: 2108723

Analytical Qualifiers

A	The reported value is determined using a "single point" calibration by GC-ECD as allowed by the method.
S	Surrogate recovery outside accepted recovery limits.
a4	Reporting limits raised due to the sample's matrix prohibiting a full volume extraction.
c1	Surrogate recovery outside of the control limits due to the dilution of the sample.
h4	Sulfuric acid permanganate (EPA 3665) cleanup.

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2108723
Date Received:	08/13/2021 16:22	**Extraction Method:**	SW3550B/3630C
Date Prepared:	08/13/2021	**Analytical Method:**	SW8082
Project:	21-186; 2118 Milvia Street, Berkely CA	**Unit:**	mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors w/ Column Style Clean-up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BE-Wcaulk-1M	**2108723-001A**	**Caulk**	**08/13/2021 13:06**	**GC22 08192146.D**	**227645**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Aroclor1016	ND		250	500	08/19/2021 21:41
Aroclor1221	ND		250	500	08/19/2021 21:41
Aroclor1232	ND		250	500	08/19/2021 21:41
Aroclor1242	ND		250	500	08/19/2021 21:41
Aroclor1248	ND		250	500	08/19/2021 21:41
Aroclor1254	**1600**	A	250	500	08/19/2021 21:41
Aroclor1260	ND		250	500	08/19/2021 21:41
PCBs, total	**1600**		250	500	08/19/2021 21:41

Surrogates	REC (%)	Qualifiers	Limits	
Decachlorobiphenyl	208	S	70-130	08/19/2021 21:41

Analyst(s): CK Analytical Comments: a4,c1,h4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BE-Wcaulk-1C	**2108723-002A**	**Caulk**	**08/13/2021 13:15**	**GC22 08182114.D**	**227645**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Aroclor1016	ND		250	500	08/18/2021 14:57
Aroclor1221	ND		250	500	08/18/2021 14:57
Aroclor1232	ND		250	500	08/18/2021 14:57
Aroclor1242	ND		250	500	08/18/2021 14:57
Aroclor1248	ND		250	500	08/18/2021 14:57
Aroclor1254	**1500**	A	250	500	08/18/2021 14:57
Aroclor1260	ND		250	500	08/18/2021 14:57
PCBs, total	**1500**		250	500	08/18/2021 14:57

Surrogates	REC (%)	Qualifiers	Limits	
Decachlorobiphenyl	220	S	70-130	08/18/2021 14:57

Analyst(s): CK Analytical Comments: a4,c1,h4

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Quality Control Report

Client:	EnviroNova	**WorkOrder:**	2108723
Date Prepared:	08/13/2021	**BatchID:**	227645
Date Analyzed:	08/17/2021	**Extraction Method:**	SW3550B/3630C
Instrument:	GC22	**Analytical Method:**	SW8082
Matrix:	Bulk Material	**Unit:**	mg/kg
Project:	21-186; 2118 Milvia Street, Berkely CA	**Sample ID:**	MB/LCS/LCSD-227645

QC Summary Report for SW8082 w/ Column Clean-up

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Aroclor1016	ND	0.0500	0.0500	-	-	-
Aroclor1221	ND	0.0500	0.0500	-	-	-
Aroclor1232	ND	0.0500	0.0500	-	-	-
Aroclor1242	ND	0.0500	0.0500	-	-	-
Aroclor1248	ND	0.0500	0.0500	-	-	-
Aroclor1254	ND	0.0500	0.0500	-	-	-
Aroclor1260	ND	0.0500	0.0500	-	-	-
Surrogate Recovery						
Decachlorobiphenyl	0.0518			0.05	104	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aroclor1016	0.151	0.155	0.15	101	103	70-130	2.44	20
Aroclor1260	0.145	0.150	0.15	97	100	70-130	3.48	20
Surrogate Recovery								
Decachlorobiphenyl	0.0430	0.0448	0.050	86	90	70-130	4.06	20

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(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 2108723 **ClientCode: EVNN**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ EQuIS ☐ Dry-Weight ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Excel

Report to:
Basil Falcone
EnviroNova
1116 S Amphlett Blvd; Suite 1
San Mateo, CA 94402
415-883-7575 FAX: 415-883-7475

Email: bfalcone@environova.com; jadams@envir
cc/3rd Party:
PO:
Project: 21-186; 2118 Milvia Street, Berkely CA

Bill to:
Leah Luciani
EnviroNova
235 Montgomery Street, Ste. 1105
San Francisco, CA 94104
lluciani@environova.com; ckhoury@env

Requested TAT: 5 days;

Date Received: **08/13/2021**
Date Logged: **08/13/2021**

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
2108723-001	BE-Wcaulk-1M	Caulk	8/13/2021 13:06	☐	A	A										
2108723-002	BE-Wcaulk-1C	Caulk	8/13/2021 13:15	☐	A	A										

Test Legend:

1	8082_PCB_SG_Caulk	2	PRDisposal Fee	3		4	
5		6		7		8	
9		10		11		12	

Project Manager: Angela Rydelius

Prepared by: Adrianna Cardoza

Comments:

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: ENVIRONOVA
Client Contact: Basil Falcone
Contact's Email: bfalcone@environova.com; jadams@environova.com; ckhoury@environova.com;

Project: 21-186; 2118 Milvia Street, Berkely CA
Comments:

Work Order: 2108723
QC Level: LEVEL 2
Date Logged: 8/13/2021

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

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	SubOut
001A	BE-Wcaulk-1M	Caulk	SW8082 (PCBs w/ Column Style Clean-up)	1	Plastic Baggie, Medium	☐	☐	8/13/2021 13:06	5 days	8/23/2021		☐	
002A	BE-Wcaulk-1C	Caulk	SW8082 (PCBs w/ Column Style Clean-up)	1	Plastic Baggie, Medium	☐	☐	8/13/2021 13:15	5 days	8/23/2021		☐	

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.

2108723

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CHAIN OF CUSTODY RECORD

TURN AROUND TIME: RUSH ☐ 1 DAY ☐ 2 DAY ☐ 3 DAY ☐ 5 DAY ☒

GeoTracker EDF ☐ PDF ☐ EDD ☐ Write On (DW) ☐ EQuIS ☐ 10 DAY ☐

Effluent Sample Requiring "J" flag ☐ UST Clean Up Fund Project ☐ ; Claim # _____

Report To: Basil Falcone **Bill To:** EnviroNova

Company: 235 Montgomery Street, Suite 1105 San Francisco, CA94104

Tele: ( ) 415-599-6657 **E-Mail:**bfalcone@environova.com

Project #: 21-186 **Project Name:** 2118 Milvia Street, Berkeley CA

Project Location: Berkeley, CA **Purchase Order#**

Sampler Signature:

SAMPLE ID	Location/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	MATRIX: Ground Water	Waste Water	Drinking Water	Sea Water	Soil	Air	Sludge	Other	METHOD PRESERVED: HCL	HNO3	Other
BE-WCaulk-M	Milvia St building ext window	8-13-21	13:06	1								X			X
BE-WCaulk-C	Center St building ext window	↓	13:15	1								X			X

Analysis Request

BTEX & TPH as Gas (8021/8015) MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)***	LUFT 5 Metals (200.8 / 6020)***	Metals (200.8 / 6020)***	Lab to Filter sample for Dissolved metals analysis	Multi TPH scan (g,d,mo)				
					X														
					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 is not specified on the chain of custody, then MAI will default to metals by E200.8.

Relinquished By:	Date:	Time:	Received By:
Brenna Deane	8-13-21	4:22	8/13/21
Relinquished By:	Date:	Time:	Received By: 8-13-21 1622
Relinquished By:	Date:	Time:	Received By:

ICE/t° 2.3 °C

GOOD CONDITION_____

HEAD SPACE ABSENT_____

DECHLORINATED IN LAB_____

APPROPRIATE CONTAINERS_____

PRESERVED IN LAB_____

COMMENTS:

VOAS O&G METALS OTHER HAZARDOUS:

PRESERVATION_____ pH<2_____

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Sample Receipt Checklist

Client Name:	**EnviroNova**	Date and Time Received:	**8/13/2021 16:22**
Project:	**21-186; 2118 Milvia Street, Berkely CA**	Date Logged:	**8/13/2021**
		Received by:	Adrianna Cardoza
WorkOrder №:	**2108723** Matrix: Caulk	Logged by:	Adrianna Cardoza
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	☐	
COC agrees with Quote?	Yes	☐	No	☐	NA ☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	NA ☑
Custody seals intact on sample bottles?	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 ☐
Samples Received on Ice?	Yes	☑	No	☐	
	(Ice Type: WET ICE)				
Sample/Temp Blank temperature		Temp: 2.3°C			NA ☐
ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)?	Yes	☐	No	☐	NA ☑
Sample labels checked for correct preservation?	Yes	☑	No	☐	
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA ☑
UCMR Samples:					
pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes	☐	No	☐	NA ☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes	☐	No	☐	NA ☑

Comments:

McCampbell Analytical, Inc.

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Analytical Report

WorkOrder: 2206A87

Report Created for: EnviroNova

1116 S Amphlett Blvd; Suite 1
San Mateo, CA 94402

Project Contact: Basil Falcone
Project P.O.: 22-167
Project: 22-167; Milvia PCB Survey

Project Received: 06/16/2022

Analytical Report reviewed & approved for release on 06/22/2022 by:

Christine Askari
Project Manager

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Glossary of Terms & Qualifier Definitions

Client: EnviroNova **WorkOrder:** 2206A87

Project: 22-167; Milvia PCB Survey

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CPT	Consumer Product Testing not NELAP Accredited
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
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LQL	Lowest Quantitation Level
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
NA	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
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Glossary of Terms & Qualifier Definitions

Client: EnviroNova **WorkOrder:** 2206A87

Project: 22-167; Milvia PCB Survey

Analytical Qualifiers

A	The reported value is determined using a "single point" calibration by GC-ECD as allowed by the method.
a4	Reporting limits raised due to the sample's matrix prohibiting a full volume extraction.
h4	Sulfuric acid permanganate (EPA 3665) cleanup

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Case Narrative

Client: EnviroNova
Project: 22-167; Milvia PCB Survey

Work Order: 2206A87
June 22, 2022

Percent Moisture

In accordance with SW-846, 8000, percent moisture is reported as:

[Moisture Weight (g)] / [Sample Wet Weight (g)] x 100

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Received:	06/16/2022 13:10	**Extraction Method:**	SW3550B
Date Prepared:	06/16/2022	**Analytical Method:**	SW8082
Project:	22-167; Milvia PCB Survey	**Unit:**	mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-A-1	2206A87-001A	Solid	06/16/2022 07:27	GC22 06182240.D	247709

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.50	1	06/18/2022 20:38
Aroclor1221	ND	0.50	1	06/18/2022 20:38
Aroclor1232	ND	0.50	1	06/18/2022 20:38
Aroclor1242	ND	0.50	1	06/18/2022 20:38
Aroclor1248	ND	0.50	1	06/18/2022 20:38
Aroclor1254	ND	0.50	1	06/18/2022 20:38
Aroclor1260	ND	0.50	1	06/18/2022 20:38
PCBs, total	ND	0.50	1	06/18/2022 20:38

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	87	60-130	06/18/2022 20:38

Analyst(s): CK Analytical Comments: h4,a4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-A-3	2206A87-002A	Solid	06/16/2022 07:20	GC22 06182241.D	247709

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.50	1	06/18/2022 20:54
Aroclor1221	ND	0.50	1	06/18/2022 20:54
Aroclor1232	ND	0.50	1	06/18/2022 20:54
Aroclor1242	ND	0.50	1	06/18/2022 20:54
Aroclor1248	ND	0.50	1	06/18/2022 20:54
Aroclor1254	ND	0.50	1	06/18/2022 20:54
Aroclor1260	ND	0.50	1	06/18/2022 20:54
PCBs, total	ND	0.50	1	06/18/2022 20:54

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	94	60-130	06/18/2022 20:54

Analyst(s): CK Analytical Comments: h4,a4

(Cont.)

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Received:	06/16/2022 13:10	**Extraction Method:**	SW3550B
Date Prepared:	06/16/2022	**Analytical Method:**	SW8082
Project:	22-167; Milvia PCB Survey	**Unit:**	mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-B-1	**2206A87-003A**	**Solid**	**06/16/2022 08:20**	**GC22 06182242.D**	**247709**

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.50	1	06/18/2022 21:10
Aroclor1221	ND	0.50	1	06/18/2022 21:10
Aroclor1232	ND	0.50	1	06/18/2022 21:10
Aroclor1242	ND	0.50	1	06/18/2022 21:10
Aroclor1248	ND	0.50	1	06/18/2022 21:10
Aroclor1254	ND	0.50	1	06/18/2022 21:10
Aroclor1260	ND	0.50	1	06/18/2022 21:10
PCBs, total	ND	0.50	1	06/18/2022 21:10

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	88	60-130	06/18/2022 21:10

Analyst(s): CK Analytical Comments: h4,a4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-B-3	**2206A87-004A**	**Solid**	**06/16/2022 08:30**	**GC22 06182222.D**	**247709**

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.50	1	06/18/2022 15:42
Aroclor1221	ND	0.50	1	06/18/2022 15:42
Aroclor1232	ND	0.50	1	06/18/2022 15:42
Aroclor1242	ND	0.50	1	06/18/2022 15:42
Aroclor1248	ND	0.50	1	06/18/2022 15:42
Aroclor1254	ND	0.50	1	06/18/2022 15:42
Aroclor1260	ND	0.50	1	06/18/2022 15:42
PCBs, total	ND	0.50	1	06/18/2022 15:42

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	94	60-130	06/18/2022 15:42

Analyst(s): CK Analytical Comments: h4,a4

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Received:	06/16/2022 13:10	**Extraction Method:**	SW3550B
Date Prepared:	06/16/2022	**Analytical Method:**	SW8082
Project:	22-167; Milvia PCB Survey	**Unit:**	mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-C-1	**2206A87-005A**	**Solid**	**06/16/2022 08:50**	**GC22 06212225.D**	**247709**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Aroclor1016	ND		5.0	10	06/21/2022 18:51
Aroclor1221	ND		5.0	10	06/21/2022 18:51
Aroclor1232	ND		5.0	10	06/21/2022 18:51
Aroclor1242	ND		5.0	10	06/21/2022 18:51
Aroclor1248	**40**	A	5.0	10	06/21/2022 18:51
Aroclor1254	**35**	A	5.0	10	06/21/2022 18:51
Aroclor1260	ND		5.0	10	06/21/2022 18:51
PCBs, total	**75**		5.0	10	06/21/2022 18:51

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	79	60-130	06/21/2022 18:51

Analyst(s): CK Analytical Comments: h4,a4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-C-3	**2206A87-006A**	**Solid**	**06/16/2022 09:00**	**GC22 06182221.D**	**247709**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Aroclor1016	ND		0.50	1	06/18/2022 15:25
Aroclor1221	ND		0.50	1	06/18/2022 15:25
Aroclor1232	ND		0.50	1	06/18/2022 15:25
Aroclor1242	ND		0.50	1	06/18/2022 15:25
Aroclor1248	**0.93**	A	0.50	1	06/18/2022 15:25
Aroclor1254	**0.93**	A	0.50	1	06/18/2022 15:25
Aroclor1260	ND		0.50	1	06/18/2022 15:25
PCBs, total	**1.9**		0.50	1	06/18/2022 15:25

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	91	60-130	06/18/2022 15:25

Analyst(s): CK Analytical Comments: h4,a4

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Received:	06/16/2022 13:10	**Extraction Method:**	SW3550B
Date Prepared:	06/16/2022	**Analytical Method:**	SW8082
Project:	22-167; Milvia PCB Survey	**Unit:**	mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-D-1	2206A87-007A	Solid	06/16/2022 09:15	GC22 06212226.D	247709

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Aroclor1016	ND		10	20	06/21/2022 19:08
Aroclor1221	ND		10	20	06/21/2022 19:08
Aroclor1232	ND		10	20	06/21/2022 19:08
Aroclor1242	ND		10	20	06/21/2022 19:08
Aroclor1248	**56**	A	10	20	06/21/2022 19:08
Aroclor1254	**56**	A	10	20	06/21/2022 19:08
Aroclor1260	ND		10	20	06/21/2022 19:08
PCBs, total	**110**		10	20	06/21/2022 19:08

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	85	60-130	06/21/2022 19:08

Analyst(s): CK Analytical Comments: h4,a4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-D-3	2206A87-008A	Solid	06/16/2022 09:30	GC22 06182220.D	247709

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Aroclor1016	ND		0.50	1	06/18/2022 15:09
Aroclor1221	ND		0.50	1	06/18/2022 15:09
Aroclor1232	ND		0.50	1	06/18/2022 15:09
Aroclor1242	ND		0.50	1	06/18/2022 15:09
Aroclor1248	**2.3**	A	0.50	1	06/18/2022 15:09
Aroclor1254	**2.2**	A	0.50	1	06/18/2022 15:09
Aroclor1260	ND		0.50	1	06/18/2022 15:09
PCBs, total	**4.5**		0.50	1	06/18/2022 15:09

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	94	60-130	06/18/2022 15:09

Analyst(s): CK Analytical Comments: h4,a4

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Received:	06/16/2022 13:10	**Extraction Method:**	SW3550B
Date Prepared:	06/16/2022	**Analytical Method:**	SW8082
Project:	22-167; Milvia PCB Survey	**Unit:**	mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-E-1	2206A87-009A	Solid	06/16/2022 09:45	GC22 06212227.D	247709

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Aroclor1016	ND		10	20	06/21/2022 19:24
Aroclor1221	ND		10	20	06/21/2022 19:24
Aroclor1232	ND		10	20	06/21/2022 19:24
Aroclor1242	ND		10	20	06/21/2022 19:24
Aroclor1248	**52**	A	10	20	06/21/2022 19:24
Aroclor1254	**76**	A	10	20	06/21/2022 19:24
Aroclor1260	ND		10	20	06/21/2022 19:24
PCBs, total	**130**		10	20	06/21/2022 19:24

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	87	60-130	06/21/2022 19:24

Analyst(s): CK Analytical Comments: h4,a4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-E-3	2206A87-010A	Solid	06/16/2022 10:00	GC22 06212228.D	247709

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	**6.6**	2.5	5	06/21/2022 19:40
Aroclor1221	ND	2.5	5	06/21/2022 19:40
Aroclor1232	ND	2.5	5	06/21/2022 19:40
Aroclor1242	ND	2.5	5	06/21/2022 19:40
Aroclor1248	ND	2.5	5	06/21/2022 19:40
Aroclor1254	ND	2.5	5	06/21/2022 19:40
Aroclor1260	ND	2.5	5	06/21/2022 19:40
PCBs, total	**6.6**	2.5	5	06/21/2022 19:40

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	79	60-130	06/21/2022 19:40

Analyst(s): CK Analytical Comments: h4,a4

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Received:	06/16/2022 13:10	**Extraction Method:**	SW3550B
Date Prepared:	06/16/2022	**Analytical Method:**	SW8082
Project:	22-167; Milvia PCB Survey	**Unit:**	mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-F-1	**2206A87-011A**	**Solid**	**06/16/2022 10:15**	**GC22 06212229.D**	**247709**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Aroclor1016	**99**		10	20	06/21/2022 19:56
Aroclor1221	ND		10	20	06/21/2022 19:56
Aroclor1232	ND		10	20	06/21/2022 19:56
Aroclor1242	ND		10	20	06/21/2022 19:56
Aroclor1248	ND		10	20	06/21/2022 19:56
Aroclor1254	**73**	A	10	20	06/21/2022 19:56
Aroclor1260	ND		10	20	06/21/2022 19:56
PCBs, total	**170**		10	20	06/21/2022 19:56

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	88	60-130	06/21/2022 19:56

Analyst(s): CK Analytical Comments: h4,a4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-F-3	**2206A87-012A**	**Solid**	**06/16/2022 10:25**	**GC22 06212230.D**	**247709**

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	**15**	5.0	10	06/21/2022 20:12
Aroclor1221	ND	5.0	10	06/21/2022 20:12
Aroclor1232	ND	5.0	10	06/21/2022 20:12
Aroclor1242	ND	5.0	10	06/21/2022 20:12
Aroclor1248	ND	5.0	10	06/21/2022 20:12
Aroclor1254	ND	5.0	10	06/21/2022 20:12
Aroclor1260	ND	5.0	10	06/21/2022 20:12
PCBs, total	**15**	5.0	10	06/21/2022 20:12

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	86	60-130	06/21/2022 20:12

Analyst(s): CK Analytical Comments: h4,a4

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Received:	06/16/2022 13:10	**Extraction Method:**	SW3550B
Date Prepared:	06/16/2022	**Analytical Method:**	SW8082
Project:	22-167; Milvia PCB Survey	**Unit:**	mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-G-1	**2206A87-013A**	**Solid**	**06/16/2022 10:35**	**GC22 06212231.D**	**247709**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Aroclor1016	ND		5.0	10	06/21/2022 20:29
Aroclor1221	ND		5.0	10	06/21/2022 20:29
Aroclor1232	ND		5.0	10	06/21/2022 20:29
Aroclor1242	ND		5.0	10	06/21/2022 20:29
Aroclor1248	**16**	A	5.0	10	06/21/2022 20:29
Aroclor1254	**15**	A	5.0	10	06/21/2022 20:29
Aroclor1260	ND		5.0	10	06/21/2022 20:29
PCBs, total	**31**		5.0	10	06/21/2022 20:29

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	81	60-130	06/21/2022 20:29

Analyst(s): CK Analytical Comments: h4,a4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-G-3	**2206A87-014A**	**Solid**	**06/16/2022 10:45**	**GC22 06182209.D**	**247709**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Aroclor1016	ND		0.50	1	06/18/2022 12:07
Aroclor1221	ND		0.50	1	06/18/2022 12:07
Aroclor1232	ND		0.50	1	06/18/2022 12:07
Aroclor1242	ND		0.50	1	06/18/2022 12:07
Aroclor1248	**0.85**	A	0.50	1	06/18/2022 12:07
Aroclor1254	**0.99**	A	0.50	1	06/18/2022 12:07
Aroclor1260	ND		0.50	1	06/18/2022 12:07
PCBs, total	**1.8**		0.50	1	06/18/2022 12:07

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	94	60-130	06/18/2022 12:07

Analyst(s): CK Analytical Comments: h4,a4

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Received:	06/16/2022 13:10	**Extraction Method:**	SW3550B
Date Prepared:	06/16/2022	**Analytical Method:**	SW8082
Project:	22-167; Milvia PCB Survey	**Unit:**	mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-H-1	**2206A87-015A**	**Solid**	**06/16/2022 11:00**	**GC22 06212232.D**	**247709**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Aroclor1016	ND		5.0	10	06/21/2022 20:46
Aroclor1221	ND		5.0	10	06/21/2022 20:46
Aroclor1232	ND		5.0	10	06/21/2022 20:46
Aroclor1242	ND		5.0	10	06/21/2022 20:46
Aroclor1248	**27**	A	5.0	10	06/21/2022 20:46
Aroclor1254	**28**	A	5.0	10	06/21/2022 20:46
Aroclor1260	ND		5.0	10	06/21/2022 20:46
PCBs, total	**55**		5.0	10	06/21/2022 20:46

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	79	60-130	06/21/2022 20:46

Analyst(s): CK Analytical Comments: h4,a4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-H-3	**2206A87-016A**	**Solid**	**06/16/2022 11:15**	**GC22 06182210.D**	**247709**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Aroclor1016	ND		0.50	1	06/18/2022 12:24
Aroclor1221	ND		0.50	1	06/18/2022 12:24
Aroclor1232	ND		0.50	1	06/18/2022 12:24
Aroclor1242	ND		0.50	1	06/18/2022 12:24
Aroclor1248	**2.0**	A	0.50	1	06/18/2022 12:24
Aroclor1254	**1.2**	A	0.50	1	06/18/2022 12:24
Aroclor1260	ND		0.50	1	06/18/2022 12:24
PCBs, total	**3.2**		0.50	1	06/18/2022 12:24

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	94	60-130	06/18/2022 12:24

Analyst(s): CK Analytical Comments: h4,a4

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Received:	06/16/2022 13:10	**Extraction Method:**	SW3550B
Date Prepared:	06/16/2022	**Analytical Method:**	SW8082
Project:	22-167; Milvia PCB Survey	**Unit:**	mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-I-1	**2206A87-017A**	**Solid**	**06/16/2022 11:25**	**GC22 06182228.D**	**247709**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Aroclor1016	ND		0.50	1	06/18/2022 17:20
Aroclor1221	ND		0.50	1	06/18/2022 17:20
Aroclor1232	ND		0.50	1	06/18/2022 17:20
Aroclor1242	ND		0.50	1	06/18/2022 17:20
Aroclor1248	**3.5**	A	0.50	1	06/18/2022 17:20
Aroclor1254	**4.3**	A	0.50	1	06/18/2022 17:20
Aroclor1260	ND		0.50	1	06/18/2022 17:20
PCBs, total	**7.8**		0.50	1	06/18/2022 17:20

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	99	60-130	06/18/2022 17:20

Analyst(s): CK Analytical Comments: h4,a4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-I-3	**2206A87-018A**	**Solid**	**06/16/2022 11:35**	**GC22 06182211.D**	**247709**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Aroclor1016	ND		0.50	1	06/18/2022 12:41
Aroclor1221	ND		0.50	1	06/18/2022 12:41
Aroclor1232	ND		0.50	1	06/18/2022 12:41
Aroclor1242	ND		0.50	1	06/18/2022 12:41
Aroclor1248	**1.0**	A	0.50	1	06/18/2022 12:41
Aroclor1254	ND		0.50	1	06/18/2022 12:41
Aroclor1260	ND		0.50	1	06/18/2022 12:41
PCBs, total	**1.0**		0.50	1	06/18/2022 12:41

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	89	60-130	06/18/2022 12:41

Analyst(s): CK Analytical Comments: h4,a4

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Received:	06/16/2022 13:10	**Extraction Method:**	ASTM D2216
Date Prepared:	06/20/2022-06/21/2022	**Analytical Method:**	SW8000
Project:	22-167; Milvia PCB Survey	**Unit:**	wet wt%

Percent Moisture

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-A-1	2206A87-001A	Solid	06/16/2022 07:27	WetChem	247937

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**0.760**	0.100	1	06/21/2022 11:00

Analyst(s): JME

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-A-3	2206A87-002A	Solid	06/16/2022 07:20	WetChem	247937

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**0.810**	0.100	1	06/21/2022 11:00

Analyst(s): JME

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-B-1	2206A87-003A	Solid	06/16/2022 08:20	WetChem	247937

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**0.656**	0.100	1	06/21/2022 11:00

Analyst(s): JME

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-B-3	2206A87-004A	Solid	06/16/2022 08:30	WetChem	247937

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**0.700**	0.100	1	06/21/2022 11:00

Analyst(s): JME

(Cont.)

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Received:	06/16/2022 13:10	**Extraction Method:**	ASTM D2216
Date Prepared:	06/20/2022-06/21/2022	**Analytical Method:**	SW8000
Project:	22-167; Milvia PCB Survey	**Unit:**	wet wt%

Percent Moisture

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-C-1	2206A87-005A	Solid	06/16/2022 08:50	WetChem	247937

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**0.782**	0.100	1	06/21/2022 11:00

Analyst(s): JME

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-C-3	2206A87-006A	Solid	06/16/2022 09:00	WetChem	247937

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**0.790**	0.100	1	06/21/2022 11:00

Analyst(s): JME

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-D-1	2206A87-007A	Solid	06/16/2022 09:15	WetChem	247937

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**0.484**	0.100	1	06/21/2022 11:00

Analyst(s): JME

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-D-3	2206A87-008A	Solid	06/16/2022 09:30	WetChem	247937

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**0.455**	0.100	1	06/21/2022 11:00

Analyst(s): JME

(Cont.)

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Received:	06/16/2022 13:10	**Extraction Method:**	ASTM D2216
Date Prepared:	06/20/2022-06/21/2022	**Analytical Method:**	SW8000
Project:	22-167; Milvia PCB Survey	**Unit:**	wet wt%

Percent Moisture

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-E-1	2206A87-009A	Solid	06/16/2022 09:45	WetChem	247937

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**0.550**	0.100	1	06/21/2022 11:00

Analyst(s): JME

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-E-3	2206A87-010A	Solid	06/16/2022 10:00	WetChem	247937

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**0.468**	0.100	1	06/21/2022 11:00

Analyst(s): JME

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-F-1	2206A87-011A	Solid	06/16/2022 10:15	WetChem	248007

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**0.800**	0.100	1	06/21/2022 16:05

Analyst(s): JME

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-F-3	2206A87-012A	Solid	06/16/2022 10:25	WetChem	248007

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**1.07**	0.100	1	06/21/2022 16:15

Analyst(s): JME

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Received:	06/16/2022 13:10	**Extraction Method:**	ASTM D2216
Date Prepared:	06/20/2022-06/21/2022	**Analytical Method:**	SW8000
Project:	22-167; Milvia PCB Survey	**Unit:**	wet wt%

Percent Moisture

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-G-1	2206A87-013A	Solid	06/16/2022 10:35	WetChem	248007

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**2.14**	0.100	1	06/21/2022 16:20

Analyst(s): JME

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-G-3	2206A87-014A	Solid	06/16/2022 10:45	WetChem	248007

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**1.34**	0.100	1	06/21/2022 16:25

Analyst(s): JME

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-H-1	2206A87-015A	Solid	06/16/2022 11:00	WetChem	248007

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**1.34**	0.100	1	06/21/2022 16:30

Analyst(s): JME

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-H-3	2206A87-016A	Solid	06/16/2022 11:15	WetChem	248007

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**1.74**	0.100	1	06/21/2022 16:35

Analyst(s): JME

(Cont.)

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Analytical Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Received:	06/16/2022 13:10	**Extraction Method:**	ASTM D2216
Date Prepared:	06/20/2022-06/21/2022	**Analytical Method:**	SW8000
Project:	22-167; Milvia PCB Survey	**Unit:**	wet wt%

Percent Moisture

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-I-1	2206A87-017A	Solid	06/16/2022 11:25	WetChem	248007

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**0.670**	0.100	1	06/21/2022 16:40

Analyst(s): JME

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
2118M-I-3	2206A87-018A	Solid	06/16/2022 11:35	WetChem	248007

Analytes	Result	RL	DF	Date Analyzed
% Moisture	**0.940**	0.100	1	06/21/2022 16:45

Analyst(s): JME

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Quality Control Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Prepared:	06/16/2022	**BatchID:**	247709
Date Analyzed:	06/19/2022	**Extraction Method:**	SW3550B
Instrument:	GC22	**Analytical Method:**	SW8082
Matrix:	Soil	**Unit:**	mg/kg
Project:	22-167; Milvia PCB Survey	**Sample ID:**	MB/LCS/LCSD-247709

QC Summary Report for SW8082

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Aroclor1016	ND	0.032	0.050	-	-	-
Aroclor1221	ND	0.032	0.050	-	-	-
Aroclor1232	ND	0.032	0.050	-	-	-
Aroclor1242	ND	0.032	0.050	-	-	-
Aroclor1248	ND	0.032	0.050	-	-	-
Aroclor1254	ND	0.032	0.050	-	-	-
Aroclor1260	ND	0.032	0.050	-	-	-
Surrogate Recovery						
Decachlorobiphenyl	0.047			0.05	94	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aroclor1016	0.16	0.16	0.15	109	109	70-130	0.282	20
Aroclor1260	0.17	0.17	0.15	112	114	70-130	2.49	20
Surrogate Recovery								
Decachlorobiphenyl	0.046	0.047	0.050	92	94	70-130	2.60	20

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Quality Control Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Prepared:	06/20/2022	**BatchID:**	247937
Date Analyzed:	06/21/2022	**Extraction Method:**	ASTM D2216
Instrument:	WetChem	**Analytical Method:**	SW8000
Matrix:	Soil	**Unit:**	wet wt%
Project:	22-167; Milvia PCB Survey	**Sample ID:**	MB-247937 2206A87-001A

QC Summary Report for Percent Moisture

Analyte	MB Result	MDL	RL			
% Moisture	ND	0.100	0.100	-	-	-

Analyte	SAMP Result	DUP Result	RPD	RPD Limit
% Moisture	0.760	0.757	0.277	15

(Cont.)

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Quality Control Report

Client:	EnviroNova	**WorkOrder:**	2206A87
Date Prepared:	06/21/2022	**BatchID:**	248007
Date Analyzed:	06/21/2022	**Extraction Method:**	ASTM D2216
Instrument:	WetChem	**Analytical Method:**	SW8000
Matrix:	Soil	**Unit:**	wet wt%
Project:	22-167; Milvia PCB Survey	**Sample ID:**	MB-248007 2206A87-011A

QC Summary Report for Percent Moisture

Analyte	MB Result	MDL	RL			
% Moisture	ND	0.100	0.100	-	-	-

Analyte	SAMP Result	DUP Result	RPD	RPD Limit
% Moisture	0.800	0.720	10.5	15

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 2206A87 **ClientCode: EVNN**

☐ WaterTrax ☐ CLIP ☐ EDF ☒ EQuIS ☒ Dry-Weight ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☒ Detection Summary ☐ Excel

Report to:
Basil Falcone
EnviroNova
1116 S Amphlett Blvd; Suite 1
San Mateo, CA 94402
415-883-7575 FAX: 415-883-7475

Email: bfalcone@environova.com; jadams@envir
cc/3rd Party:
PO: 22-167
Project: 22-167; Milvia PCB Survey

Bill to:
Leah Luciani
EnviroNova
235 Montgomery Street, Ste. 1105
San Francisco, CA 94104
lluciani@environova.com; ckhoury@env

Requested TAT: 5 days;

Date Received: **06/16/2022**
Date Logged: **06/16/2022**

Lab ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
2206A87-001	2118M-A-1	Solid	6/16/2022 07:27	☐	A	A	A									
2206A87-002	2118M-A-3	Solid	6/16/2022 07:20	☐	A	A	A									
2206A87-003	2118M-B-1	Solid	6/16/2022 08:20	☐	A	A	A									
2206A87-004	2118M-B-3	Solid	6/16/2022 08:30	☐	A	A	A									
2206A87-005	2118M-C-1	Solid	6/16/2022 08:50	☐	A	A	A									
2206A87-006	2118M-C-3	Solid	6/16/2022 09:00	☐	A	A	A									
2206A87-007	2118M-D-1	Solid	6/16/2022 09:15	☐	A	A	A									
2206A87-008	2118M-D-3	Solid	6/16/2022 09:30	☐	A	A	A									
2206A87-009	2118M-E-1	Solid	6/16/2022 09:45	☐	A	A	A									
2206A87-010	2118M-E-3	Solid	6/16/2022 10:00	☐	A	A	A									
2206A87-011	2118M-F-1	Solid	6/16/2022 10:15	☐	A	A	A									
2206A87-012	2118M-F-3	Solid	6/16/2022 10:25	☐	A	A	A									
2206A87-013	2118M-G-1	Solid	6/16/2022 10:35	☐	A	A	A									
2206A87-014	2118M-G-3	Solid	6/16/2022 10:45	☐	A	A	A									
2206A87-015	2118M-H-1	Solid	6/16/2022 11:00	☐	A	A	A									

Test Legend:

1	8082_PCB_Solid	2	PERmoist_S	3	PRDisposal Fee	4	
5		6		7		8	
9		10		11		12	

Prepared by: Valerie Alfaro

Comments:

NOTE: Soil samples are discarded 60 days after receipt 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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(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 2206A87 **ClientCode: EVNN**

☐ WaterTrax ☐ CLIP ☐ EDF ☒ EQuIS ☒ Dry-Weight ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☒ Detection Summary ☐ Excel

Report to:
Basil Falcone
EnviroNova
1116 S Amphlett Blvd; Suite 1
San Mateo, CA 94402
415-883-7575 FAX: 415-883-7475

Email: bfalcone@environova.com; jadams@envir
cc/3rd Party:
PO: 22-167
Project: 22-167; Milvia PCB Survey

Bill to:
Leah Luciani
EnviroNova
235 Montgomery Street, Ste. 1105
San Francisco, CA 94104
lluciani@environova.com; ckhoury@env

Requested TAT: **5 days;**

Date Received: **06/16/2022**
Date Logged: **06/16/2022**

Lab ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
2206A87-016	2118M-H-3	Solid	6/16/2022 11:15	☐	A	A	A									
2206A87-017	2118M-I-1	Solid	6/16/2022 11:25	☐	A	A	A									
2206A87-018	2118M-I-3	Solid	6/16/2022 11:35	☐	A	A	A									

Test Legend:

1	8082_PCB_Solid	2	PERmoist_S	3	PRDisposal Fee	4	
5		6		7		8	
9		10		11		12	

Prepared by: Valerie Alfaro

Comments:

NOTE: Soil samples are discarded 60 days after receipt 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: ENVIRONOVA
Client Contact: Basil Falcone
Contact's Email: bfalcone@environova.com; jadams@environova.com; ckhoury@environova.com;bdeane@environova.com;

Project: 22-167; Milvia PCB Survey
Comments:

Work Order: 2206A87
QC Level: LEVEL 2
Date Logged: 6/16/2022

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

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
001A	2118M-A-1	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 7:27	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐
002A	2118M-A-3	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 7:20	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐
003A	2118M-B-1	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 8:20	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐
004A	2118M-B-3	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 8:30	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐
005A	2118M-C-1	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 8:50	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐
006A	2118M-C-3	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 9:00	5 days	6/23/2022		☐	☐

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).

- Organic extracts are held for 40 days before disposal; Inorganic extract are held for 30 days.

- 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.

U = An unpreserved container was received for a method that suggests a preservation in order to extend hold time for analysis.**

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WORK ORDER SUMMARY

Client Name: ENVIRONOVA
Client Contact: Basil Falcone
Contact's Email: bfalcone@environova.com; jadams@environova.com; ckhoury@environova.com;bdeane@environova.com;

Project: 22-167; Milvia PCB Survey
Comments:

Work Order: 2206A87
QC Level: LEVEL 2
Date Logged: 6/16/2022

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

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
006A	2118M-C-3	Solid	SW8082 (PCBs Only)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 9:00	5 days	6/23/2022		☐	☐
007A	2118M-D-1	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 9:15	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐
008A	2118M-D-3	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 9:30	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐
009A	2118M-E-1	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 9:45	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐
010A	2118M-E-3	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 10:00	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐
011A	2118M-F-1	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 10:15	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐

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).

- Organic extracts are held for 40 days before disposal; Inorganic extract are held for 30 days.

- 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.

U = An unpreserved container was received for a method that suggests a preservation in order to extend hold time for analysis.**

McCampbell Analytical, Inc.
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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

WORK ORDER SUMMARY

Client Name: ENVIRONOVA
Client Contact: Basil Falcone
Contact's Email: bfalcone@environova.com; jadams@environova.com; ckhoury@environova.com;bdeane@environova.com;

Project: 22-167; Milvia PCB Survey
Comments:

Work Order: 2206A87
QC Level: LEVEL 2
Date Logged: 6/16/2022

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

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
012A	2118M-F-3	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 10:25	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐
013A	2118M-G-1	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 10:35	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐
014A	2118M-G-3	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 10:45	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐
015A	2118M-H-1	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 11:00	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐
016A	2118M-H-3	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 11:15	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐
017A	2118M-I-1	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 11:25	5 days	6/23/2022		☐	☐

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: ENVIRONOVA
Client Contact: Basil Falcone
Contact's Email: bfalcone@environova.com; jadams@environova.com; ckhoury@environova.com;bdeane@environova.com;

Project: 22-167; Milvia PCB Survey
Comments:

Work Order: 2206A87
QC Level: LEVEL 2
Date Logged: 6/16/2022

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

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
017A	2118M-I-1	Solid	SW8082 (PCBs Only)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 11:25	5 days	6/23/2022		☐	☐
018A	2118M-I-3	Solid	SW 8000 (Percent Moisture)	1	50mL Digestion Tube	☐	☐	☐	6/16/2022 11:35	5 days	6/23/2022		☐	☐
			SW8082 (PCBs Only)			☐	☐	☐		5 days	6/23/2022		☐	☐

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General COC

MAI Work Order # 2206A87

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 | Dry Weight | Bottle Order #
Delivery Format: PDF | GeoTracker EDF | EDD | CLIP EDT (DW) | Detect Summary

Report To: Basil Falcone — Bill To: Basil Falcone
Company: EnviroNova
Email: bfalcone@environova.com
Alt Email: ckhoury@environova.com — Tele: 415-883-7575
Project Name: Milvia PCB Survey — Project #: 22-167
Project Location: 2118 Milvia St. Berkeley, CA — PO # 22-167
Sampler Signature:

SAMPLE ID / Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	PCB 8082A	% moisutre
2118M-A-1	6-16-22	7:27	1	Concrete	NA	●	●
2118M-A-3	6-16-22	7:20	1	Concrete	NA	●	●
2118M-B-1	6-16-22	8:20	1	Concrete	NA	●	●
2118M-B-3	6-16-22	8:30	1	Concrete	NA	●	●
2118M-C-1	6-16-22	8:50	1	Concrete	NA	●	●
2118M-C-3	6-16-22	9:00	1	Concrete	NA	●	●
2118M-D-1	6-16-22	9:15	1	Concrete	NA	●	●
2118M-D-3	6-16-22	9:30	1	Concrete	NA	●	●
2118M-E-1	6-16-22	9:45	1	Concrete	NA	●	●
2118M-E-3	6-16-22	10:00	1	Concrete	NA	●	●

Analysis Requested

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.

Comments / Instructions

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
Jim Konwicki / EnviroNova	6/16/22	1310		6/16/22	1310

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 5.4 °C Initials MM

blue

Page 1 of 2

General COC

MAI Work Order # 2206A87

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CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush | 2 Day Rush | 3 Day Rush | STD ● | Quote #
J-Flag / MDL | ESL | Cleanup Approved | Dry Weight | Bottle Order #
Delivery Format: PDF | GeoTracker EDF | EDD | CLIP EDT (DW) | Detect Summary

Report To: Basil Falcone — Bill To: Basil Falcone
Company: EnviroNova
Email: bfalcone@environova.com
Alt Email: ckhoury@environova.com — Tele: 415-883-7575
Project Name: Milvia PCB Survey — Project #: 22-167
Project Location: 2118 Milvia St. Berkeley, CA — PO # 22-167
Sampler Signature:

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	PCB 8082A	% moisutre	Analysis Requested
2118M-F-1	6-16-22	10:15	1	Concrete	NA	●	●	
2118M-F-3	6-16-22	10:25	1	Concrete	NA	●	●	
2118M-G-1	6-16-22	10:35	1	Concrete	NA	●	●	
2118M-G-3	6-16-22	10:45	1	Concrete	NA	●	●	
2118M-H-1	6-16-22	11:00	1	Concrete	NA	●	●	
2118M-H-3	6-16-22	11:15	1	Concrete	NA	●	●	
2118M-I-1	6-16-22	11:25	1	Concrete	NA	●	●	
2118M-I-3	6-16-22	11:35	1	Concrete	NA	●	●	

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.

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Comments / Instructions

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
/ EnviroNova	6/16/22	1310		6/16/22	1310

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 ____

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

Sample Receipt Checklist

Client Name:	**EnviroNova**	Date and Time Received:	**6/16/2022 13:10**
Project:	**22-167; Milvia PCB Survey**	Date Logged:	**6/16/2022**
		Received by:	Valerie Alfaro
WorkOrder №:	**2206A87** Matrix: Solid	Logged by:	Valerie 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	☐		
COC agrees with Quote?	Yes	☐	No	☐	NA	☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	NA	☑
Custody seals intact on sample bottles?	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	☐		

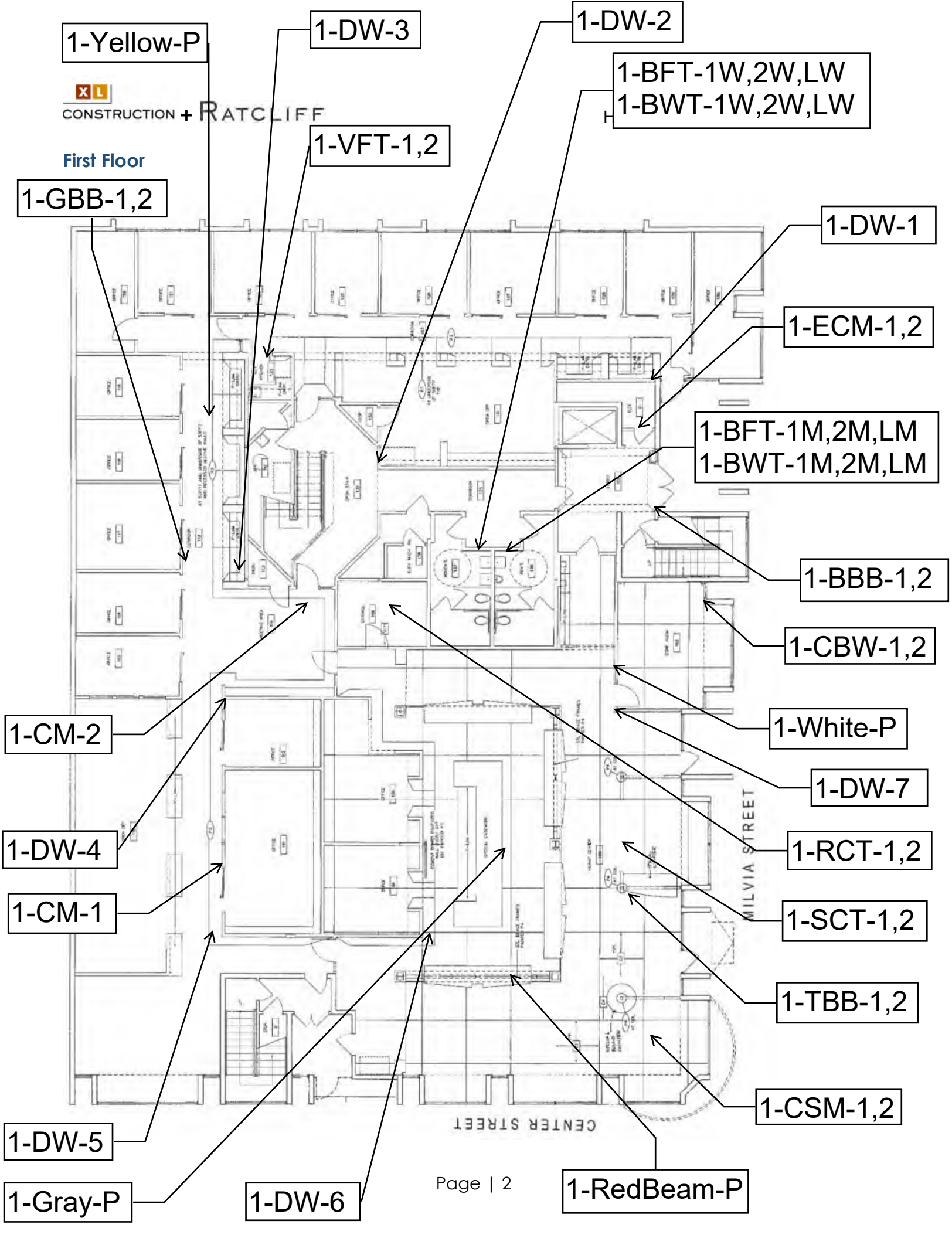
Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA	☐
Samples Received on Ice?	Yes	☑	No	☐		
	(Ice Type: BLUE ICE)					
Sample/Temp Blank temperature		Temp: 5.4°C			NA	☐
ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)?	Yes	☐	No	☐	NA	☑
Sample labels checked for correct preservation?	Yes	☑	No	☐		
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA	☑
UCMR Samples:						
pH tested and acceptable upon receipt (200.7: ≤2; 533: 6 - 8; 537.1: 6 - 8)?	Yes	☐	No	☐	NA	☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L) [not applicable to 200.7]?	Yes	☐	No	☐	NA	☑

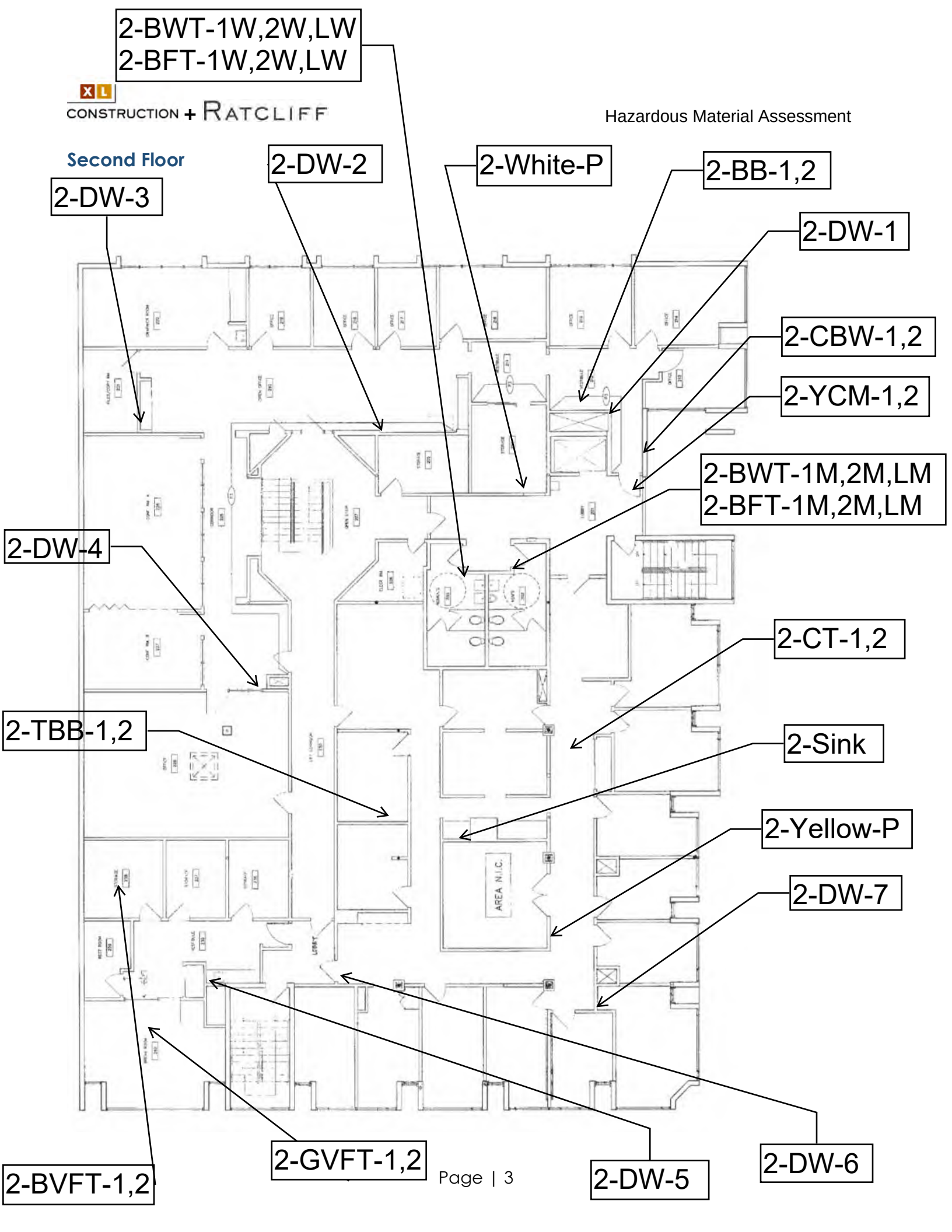
Comments:

CONSTRUCTION + RATCLIFF

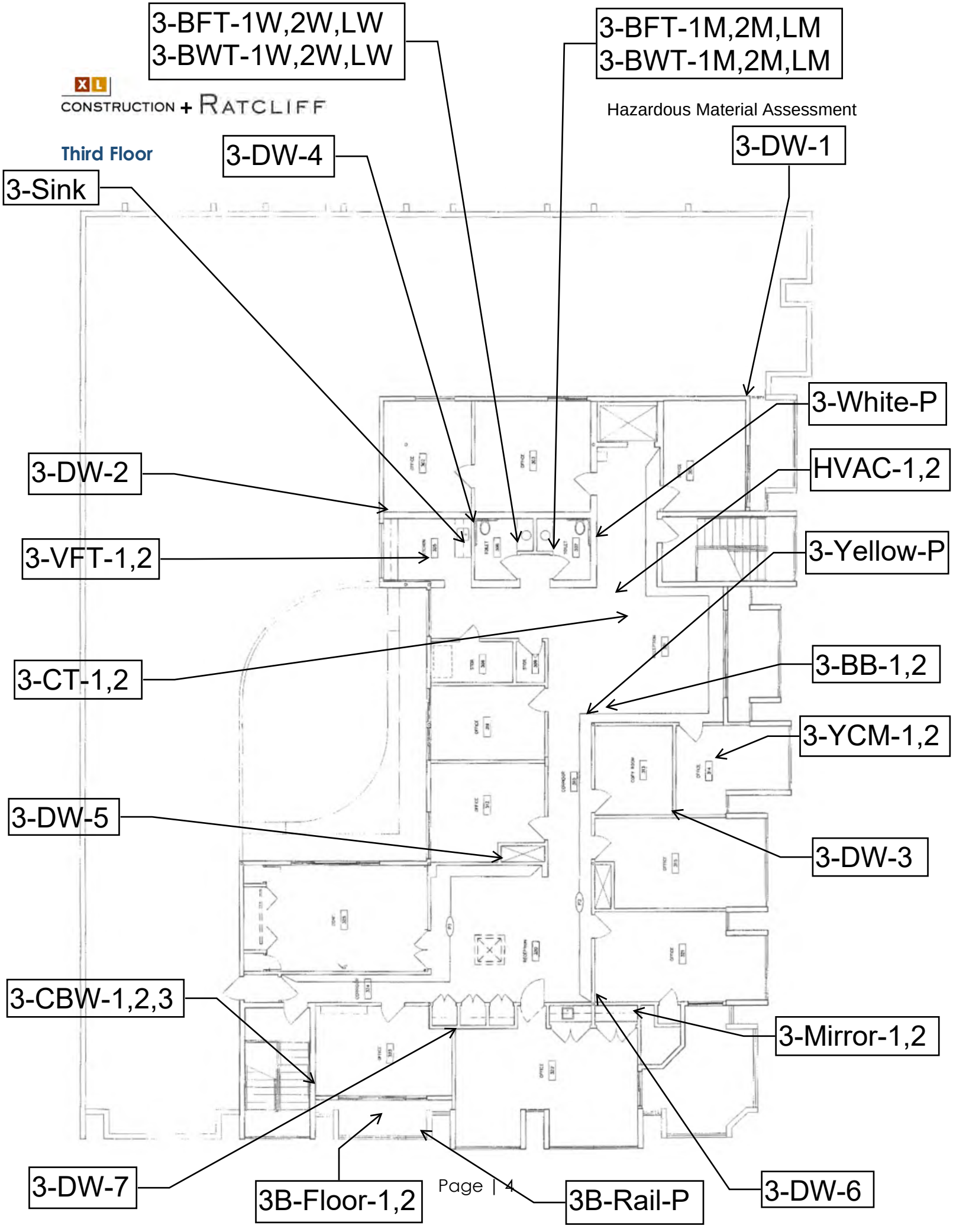
First Floor



Second Floor



Third Floor


3-BFT-1W,2W,LW
3-BWT-1W,2W,LW
3-BFT-1M,2M,LM
3-BWT-1M,2M,LM
3-DW-4
3-DW-1
3-Sink
3-White-P
3-DW-2
HVAC-1,2
3-VFT-1,2
3-Yellow-P
3-CT-1,2
3-BB-1,2
3-YCM-1,2
3-DW-5
3-DW-3
3-CBW-1,2,3
3-Mirror-1,2
3-DW-7
3B-Floor-1,2
3B-Rail-P
3-DW-6

2118 Milvia Street, Roof, Berkeley CA

21-186

8/13/21

R-O

R-R

BE-Stucco-1

R-F

R-C

BE-Stucco-2

R-E

BE-Stucco-3

R-N

R-H

R-Q

R-D

R-G

R-B

R-J

R-K

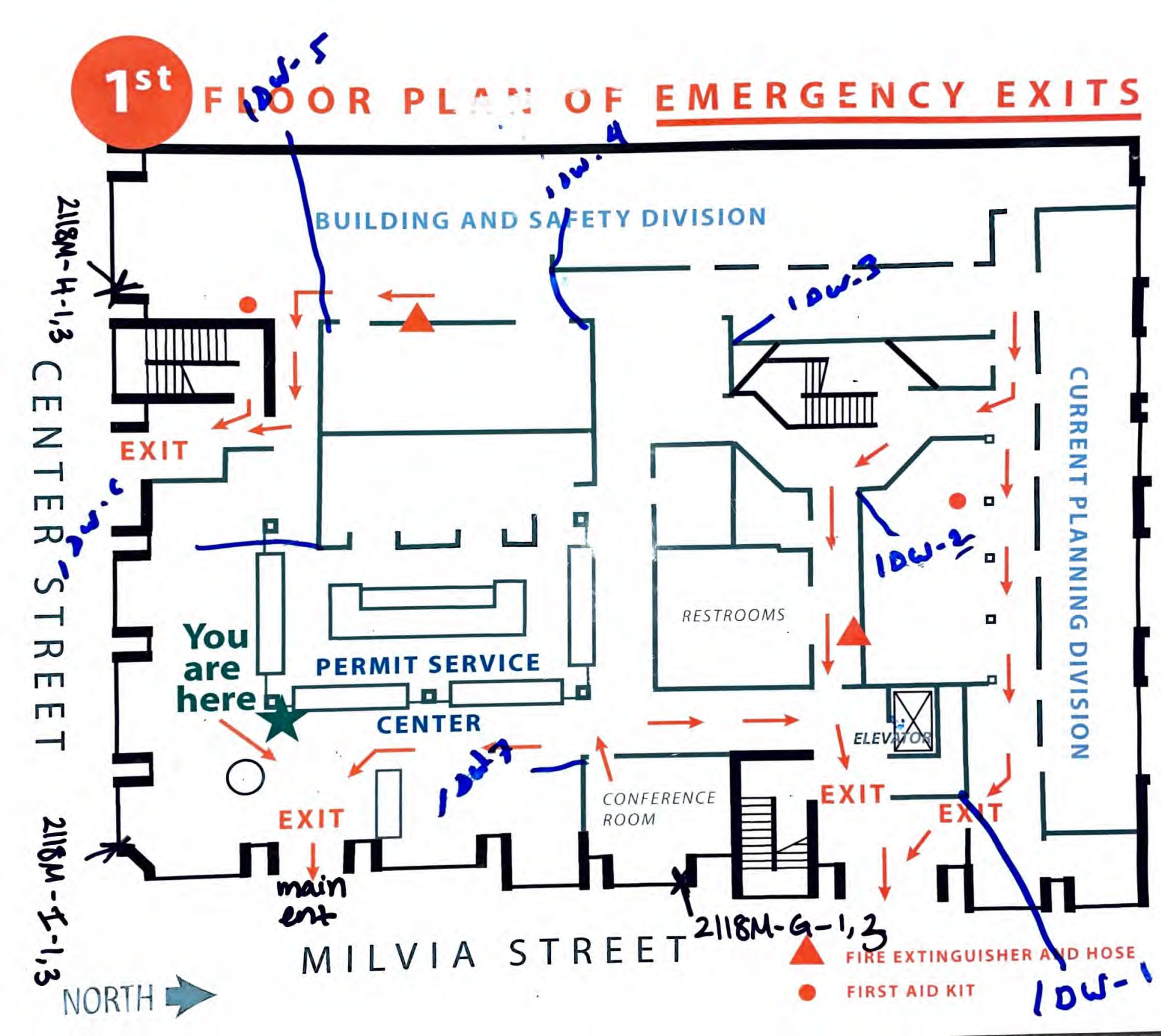
BE-WC-1M,2M
BE-WCaulk-1M
BE-Beige-P

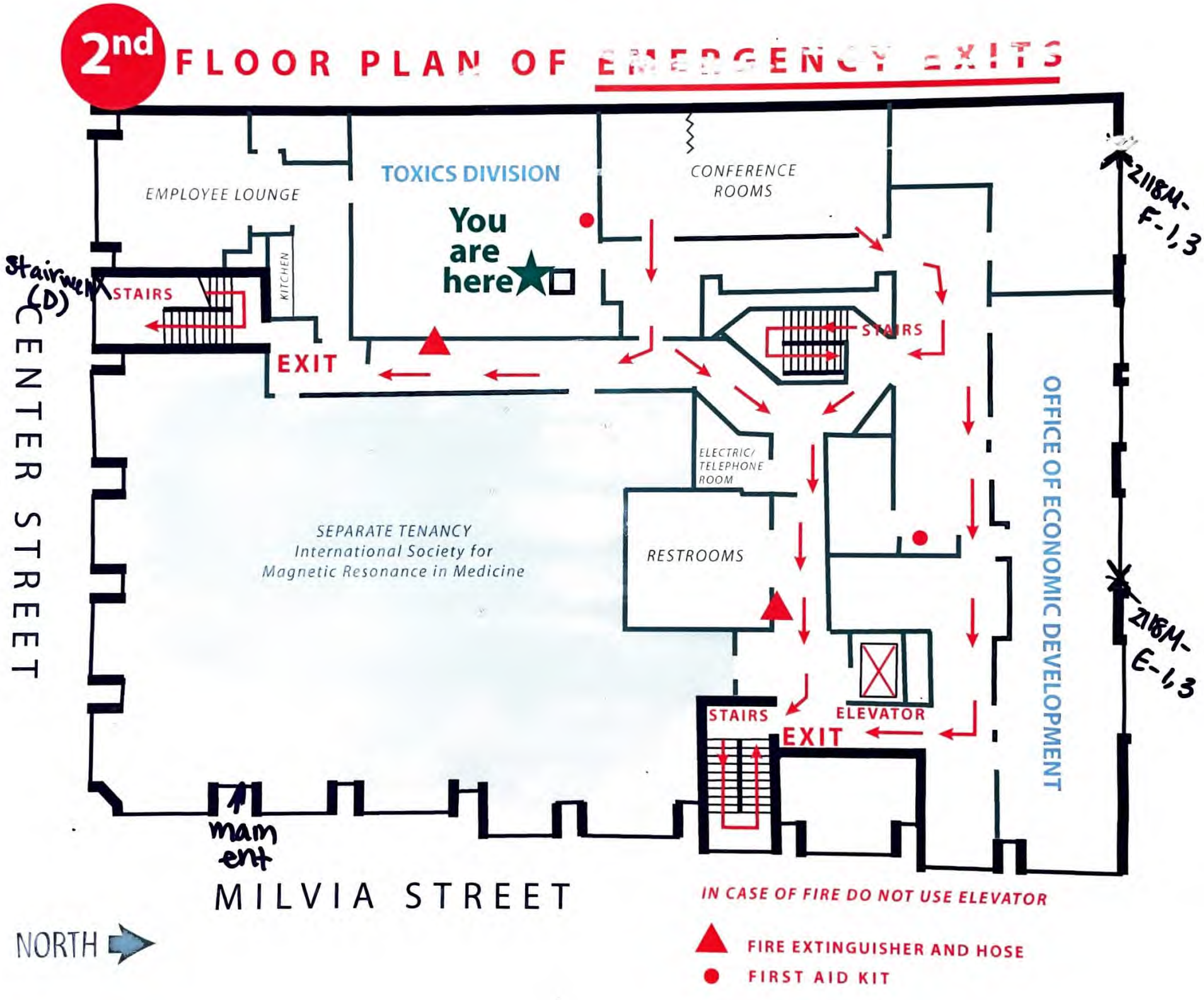
BE-Stucco-4
BE-WC-1C,2C
BE-WCaulk-1C
BE-White-P

R-M

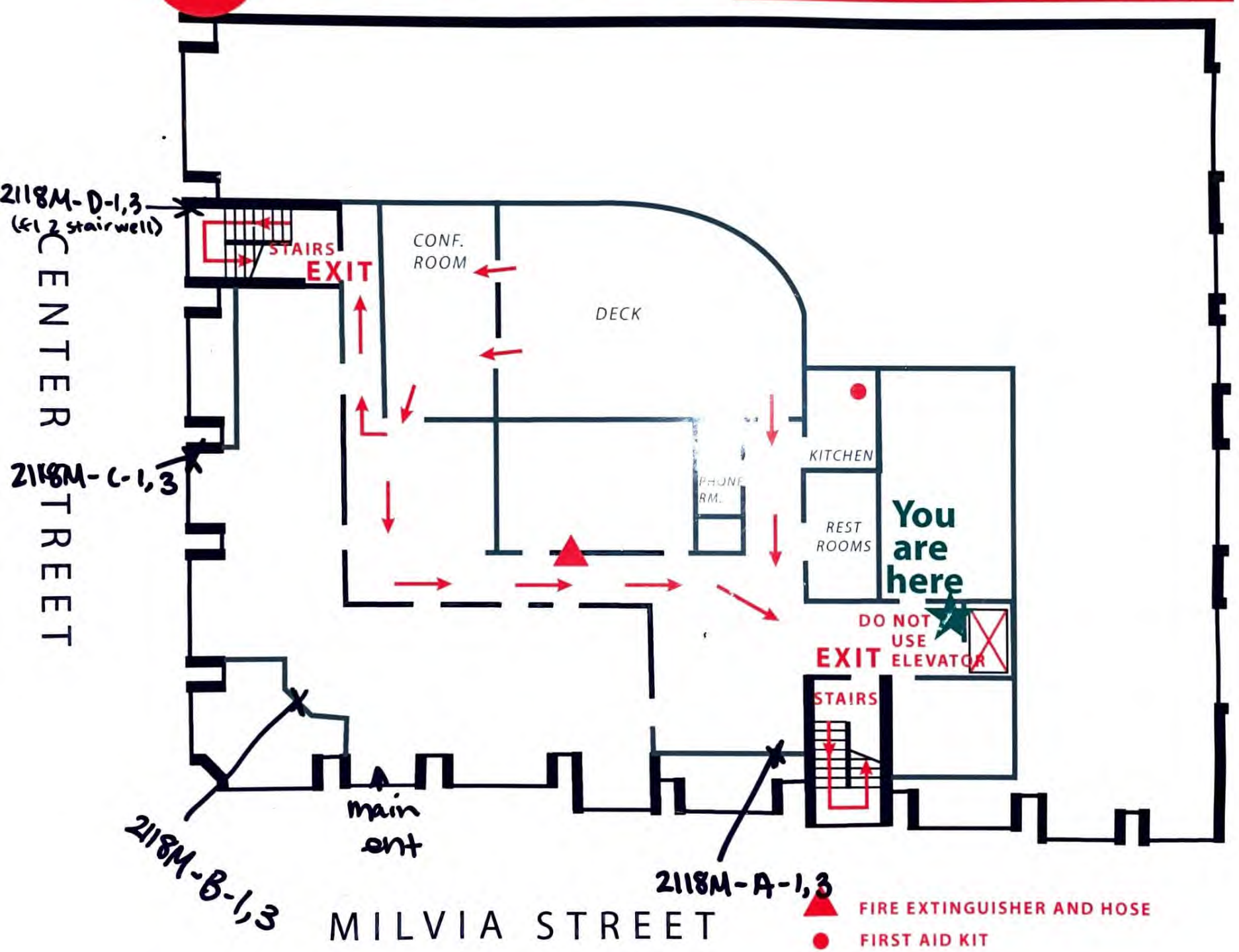
L-R

R-A


1st
FLOOR PLAN OF EMERGENCY EXITS
BUILDING AND SAFETY DIVISION
CURRENT PLANNING DIVISION
CENTER STREET
MILVIA STREET
2118M-4-1,3
2118M-1-1,3
2118M-G-1,3
EXIT
EXIT
EXIT
EXIT
You are here
PERMIT SERVICE CENTER
RESTROOMS
ELEVATOR
CONFERENCE ROOM
main ent
NORTH
FIRE EXTINGUISHER AND HOSE
FIRST AID KIT
1DW-5
1DW-4
1DW-3
1DW-2
1DW-1
1DW-6
1DW-7


2nd
FLOOR PLAN OF EMERGENCY EXITS
TOXICS DIVISION
EMPLOYEE LOUNGE
CONFERENCE ROOMS
You are here
KITCHEN
STAIRS
EXIT
STAIRS
ELECTRIC/ TELEPHONE ROOM
SEPARATE TENANCY
International Society for Magnetic Resonance in Medicine
RESTROOMS
OFFICE OF ECONOMIC DEVELOPMENT
CENTER STREET
MILVIA STREET
STAIRS
ELEVATOR
EXIT
IN CASE OF FIRE DO NOT USE ELEVATOR
FIRE EXTINGUISHER AND HOSE
FIRST AID KIT
NORTH

3rd FLOOR PLAN OF EMERGENCY EXITS



2118 Milvia Street, Floors 1-3 & Roof Project
Work Plan and Specification

Project Information (To be completed by Trade Contractor)

Project Name: Asbestos Lead and PCB Abatement		**Project Location: (Bldg./Room/Bay/Chase #)** **2118 Milvia Street, Floors 1-3 & Roof** **Berkeley, CA**	
Sub-Contractor Name: To Be Determined		**Trade:** Abatement	
Project Duration: (number of days projected) 10 days estimated			
Foreman's Name: Basil Falcone (EnviroNova)	**Cell Phone:** 415-599-6657	**Email:** bfalcone@environova.com	**Office phone:** 415-883-7575

Short description of work being performed

Removal and abatement of asbestos-containing materials, PCB impacted sealants and adjacent concrete/plaster and Lead impacted coatings. As work is on the roof, workers must remain 10 feet away from the leading edge and must use fall protection if abatement activities require work within 10 feet of the edge. The Contractor shall provide the anchors and tie-offs for fall protection, but the abatement contractor shall provide fall protection equipment for their workers. The abatement contractor shall set up a regulated area and the ACM, Lead and PCBs shall be removed as intact as feasible, utilizing wet methods. Take caution to not over-water and create a slip hazard. A HEPA-assisted vacuum shall be used to clean any dust and debris from the regulated work area. All waste shall be bagged immediately, adequately wetted, and will be transported off the roof using rope and pulley then freight elevator for disposal in dumpster. The Abatement Contractor will perform all abatement and EnviroNova will complete all procedural air monitoring and oversight of abatement activities. Clearance air samples will be required and personal air monitoring of the workers for asbestos, Lead and PCB shall be performed. The abatement will be deemed successful after EnviroNova completes a visual inspection of the areas, air clearance sampling and collect bulk samples of any remaining materials to confirm that there are not 3 dimensional materials left. Staining of substrate is considered normal and not achievable if the substrate is to remain.

The detailed Abatement Specifications are attached along with the historical reports

Work Description Highlight Bullets – List *MAJOR* tasks regarding your Scope of Work (detail on back side)

Abatement Scope of Work

- **Set up regulated work area(s) on roof.**
- **Use fall protection when working within 10 feet of leading edge. Anchors and tie-offs and fall protection equipment shall be provided by abatement contractor.**
- **Removal and abatement of asbestos-containing materials, PCB impacted materials and Lead impacted coatings.**
- **Set up negative pressure enclosures for inside work.**
- **Use HEPA-assisted vacuum to clean area after materials are removed. If mechanical means are used, tools should have HEPA attachment for dust collection.**
- **EnviroNova to collect procedural air samples – 2 per shift. For Roof work, place 1 sample upwind of regulated work area, and 1 sample downwind. Personal air samples for asbestos, lead and PCBs will be performed on the workers.**
- **The Abatement Contractor will perform all abatement and EnviroNova will complete all procedural air monitoring and oversight of abatement activities. Clearance air samples will be required and personal air monitoring of the workers for asbestos, Lead and PCB shall be performed. The abatement will be deemed successful after EnviroNova completes a visual inspection of the areas, air clearance sampling and collect bulk samples of any remaining materials to confirm that there are not 3 dimensional materials left. Staining of substrate is considered normal and not achievable if the substrate is to remain.**

- **Minimum PPE while onsite includes work boots, safety glasses, reflective vest, hard hat, gloves, and face covering of choice.**
- **PPE while performing abatement activities includes work boots, safety glasses, hard hat, gloves, Tyvek suit, and half-face respirator. Appropriate signage will be posted.**

Site Incident Prevention Bullets - conduct a hazard assessment of the work area and list precautionary measures taken to prevent any Interruption to the area or Production (ex: sprinkler heads, stored material, interrupting employee path of travel/work area, exits, open floor tiles, spill protection, etc*) Include Maps*

Please see Trade Company's Job Hazard Analyses (JHA) *(for high level detail)* and Daily Pre-Task Plans (PTP) for detailed safety, health and environmental tasks, hazards and mitigation plans.

Products/Chemicals to be used – Attach all *Safety Data Sheets* that are pre-approved and will be used only for this project.
(Products containing prop 65 chemicals must be highlighted)

Name of Product	Description of application (brushed/sprayed/injected/etc)	Quantity to be used (lbs/gal/liters/etc)	Size of each container (lbs/gal/liters/etc)	Rate of Consumption (ex:2 gal/day, 2lbs/week/etc)

Task Plan Checklist

	Yes	No	Note: Turn in all Training Documents and SDS to GC/ PM prior to start of work
1		X	Does your Scope of Work (SOW) *need a SIPP*? (See the CA SIPP Matrix.)
2		X	Need any permits or signs? (i.e. EEW, Excavation, Confined Space, etc… See Permit Matrix)
3	X		Do all workers have appropriate training for the tasks they will perform (i.e., fall protection, LOTO, ladders, Line Break / Demo, etc.)? Provide appropriate training documents to GC for each worker. (See training Matrix)
4		X	Putting building on test or performing Fire/Life/Safety Install/Demo? Then a pink card or red tag is needed
5		X	Performing Hot Work (welding, grinding)? Then Hot Work permit is needed.
6		X	Using chemicals or hazardous material? If yes, it cannot contain Prop 65 chemicals. The SDS must be submitted to Intel for approval prior to arrival/usage.
7	X		Generating Hazardous Waste? This needs to be disposed of through Intel. *Specify hazardous materials here:* **Asbestos waste**
8		X	Energized Electrical Work (EEW)? Then EEW permit needed.
9		X	Removing (RMF) Raised Floor tiles? If yes, appropriate barricading methods and work practices must be followed.
10	X		Will work be conducted at elevated locations > 6 feet? Check items you will be using: ☐ Ladders >8ft ☐ Scaffold ☐ Scissor Lift ☐ JLG X Other __**Fall Protection – Roof Work**_

Task Hazard Analysis

1) **List major tasks from your Work Plan Bullets (on front page)**
2) **Identify the Hazards/Risk associated with each task**
3) **Define the mitigation plan to eliminate and/or control the Hazard/Risk**

Job Step/Task	Hazard/Risk	Mitigation Plan
Arrive onsite with materials through D2 loading dock.	Other trades. Ladder for roof access.	Social distancing, face coverings required at a minimum. Use rope & pulley to bring materials up ladder onto roof.
Set up regulated work area on roof.	Other trades. Falls from leading edge.	Red barrier tape, signage will be posted. Fall protection required when working within 10 feet of leading edge.
Make sure area stays clean of materials and debris at all times.	Trip hazard.	Store materials in safe area outside of regulated work area and away from leading edge.
Removal of mastic and non-fibrous material on roofing materials.	Breathing dust particles, falls from leading edge.	Use of half-face respirator, Tyvek suit, gloves and rubber boots. Fall protection required when working within 10 feet of leading edge.
Debris will be double bagged 6mil and placed into a dumpster for disposal.	Bag ripping, particles.	Double bag to prevent spills. Rope and pulley to lower bags down ladder and then cart through D2 using freight elevator.
Perform visual inspection after abatement activities are completed.	Falls from leading edge.	Fall protection.
Demob.		

Work Procedure General Requirements Inside

OSHA CLASS I Work

- Use only trained and experienced asbestos removal workers.
- Isolate HVAC by sealing with a minimum of two layers of 6-mil, fire-retardant polysheeting.
- Demarcate the regulated area.
- Debris not in the immediate area of work shall be cleaned up immediately.

OSHA CLASS II Work

- Use only trained and experienced asbestos removal workers.
- Isolate HVAC by sealing with a minimum of two layers of 6-mil, fire-retardant polysheeting.
- Demarcate the regulated area.
- Debris not in the immediate area of work shall be cleaned up immediately.

- Signs shall be posted in accordance with EPA and OSHA regulations for all regulated areas.
- No visitors, except for the government inspectors having jurisdiction, or BCCI employees or their consultants shall be permitted in the work area.
- Equipment in poor condition and/or not in proper working order will be rejected.
- Dirty equipment, material or supplies not free of all visible dust and debris will be rejected.
- Fire extinguishers shall be placed inside and outside containment (one for every 5,000 ft^2).
- Ceiling tile to be reused shall be HEPA-vacuumed **and** wet-wiped on both sides.
- Surrounding objects such as diffusers, light fixture, ceiling grid, etc., should also be wet-wiped **and** HEPA-vacuumed.
- Materials are not to be dropped to the floor.
- Operations that generate an unusual amount of noise shall be performed after normal building operation hours.
- All ACM bags will be carried in water tight carts.
- Maximum elevator loads will be one-thousand (1,000) pounds less than stated capacity.
- Elevator will not be used for any other purpose during off-load of ACM bags.
- All asbestos-related work shall be supervised by a Competent Person.
- All work shall be performed without disturbance to adjacent tenants.
- All work, where feasible, shall be performed using HEPA-vacuums and wet methods.
- Prior to commencement of work, the Abatement Contractor is to provide the Program Coordinator with a negative exposure assessment if one has been performed.
- If an alternative or modified method is used, proper written certification shall be submitted prior to commencement of work.

Filter Leak Testing

- All negative air machines shall have passed filter leak testing (D.O.P.) **at the start of every new project**.
- The D.O.P. testing and certification shall be performed onsite at the project location. A third party, qualified professional shall perform all D.O.P. testing. The certifications shall be labeled on the machines and certificates posted on-site. All HEPA vacuums shall be D.O.P. re-certified every 30 days if a project lasts longer than 30 days. The certifications shall be included in the final report from the Asbestos Consultant's report to the Property Manager.

Negative Pressure Enclosure (NPE)

- NPE consists of critical barriers and two layers of polysheeting covering all walls, floors, ceiling and anything remaining in the regulated area.
- All Emergency Exits shall be marked clearly and all workers shall be informed of the exit locations.
- Carpeted floors are to be covered with a minimum of two layers of polysheeting extending 18 inches up the walls.
- Seams and joints shall be airtight and not allow water to leak out of containment.
- Window coverings shall be removed and be replaced after tear down.
- All walls in the NPE, which will remain are to be covered with polysheeting.
- Abatement Contractor and Asbestos Consultant are to verify that any temporary electrical power has been installed.
- A minimum of **six (6)** air changes per hour shall be maintained.
- Manifolds for negative air machine hoses shall be weather tight and have small louvers over the exhaust holes. The manifold shall be as inconspicuous as possible and be painted flat black.
- Negative pressure differential shall never fall below -0.02 column inches of water. Differential pressure should average -0.04 column inches.
- Negative pressure shall be maintained until air clearance testing is passed.
- Air movement shall be directed away from employees.
- The NPE shall be inspected for breaches and smoke tested for leaks prior to work commencement and at the beginning of each shift.
- All equipment, tools, ACM bags and other materials are to be removed from NPE prior to visual inspection.

Materials

- Fire resistant or non-combustible construction including fire-treated wood shall be required for any temporary structures built for asbestos operations.
- Only 6 mil, fire-retardant polysheeting or heavier, if specified shall be used.
- The entry and exit flaps to work area shall be constructed of clear polyethylene freezer flaps or Z-doors. Freezer flaps or Z-doors must overlap to maintain pressure differential.
- Observation windows shall be made of a clear rigid material (such as Plexiglas or Lexan) free of scratches and obstruction. The windows shall be located, where feasible, to allow viewing of the entire NPE.
- Other materials may be specified.

Decontamination Unit (Decon)

- Decon shall be placed away from the view of building occupants
- Decon unit shall be a two chambered unit consisting of a clean room, and equipment room.
- Scaffolding used to build decon shall not exceed a working height or 6 feet 6 inches to allow access for ceiling work above decon area.
- All water supply, showers, filtering, heating and drain apparatus shall be placed in leak tight pans.
- Water that may be asbestos contaminated shall be filtered through a one micron filter prior to disposal.
- Hoses used to empty the decon water shall be labeled for such use and **only** used for such use.
- Rubberized pool liners are required under the decon area.
- The Abatement Contractor shall, at the end of the shift, verify that all water sources are turned off and drained, and that any standing water has been cleaned up.
- The Abatement Contractor shall keep the decon in a clean condition.
- Masonite panels shall be placed on all exit paths and traffic areas.

Work Procedure Summary of General Requirements Outside

OSHA CLASS II Roof/Exterior Work

- Use only trained and experienced asbestos removal workers.
- Demarcate the regulated area.
- Debris not in the immediate area of work shall be cleaned up immediately.
- Roof level heating and ventilation air intake sources must be isolated by covering with plastic sheeting prior to the start of the work.
- Wet methods must be used to remove asphaltic shingles and felts that are not intact, or will be rendered non-intact by the removal, unless such wet methods are not feasible or will create safety hazards. This requirement notwithstanding, removal or repair of sections of intact roofing does not require the use of wet methods or HEPA vacuuming as long as the methods used in the removal or repair do not render the roofing material non-intact, and no visible emissions are produced.
- Where cutting machines are used in the removal of asphaltic shingles and felts, said cutting machines shall be equipped with a HEPA vacuum to capture dust produced by the cutting process. Cutting machines that are not equipped with a HEPA vacuum to capture dust produced by the cutting process shall only be used inside a work area for which containment sufficient to prevent visible emissions of fugitive dust to the ambient air has been established.
- Asbestos-containing materials or felts must not be dropped or thrown to the ground. Unless the material is carried or passed to the ground by hand, it must be lowered to the ground by crane or hoist or transferred in dust-tight chutes
- All waste must be kept wet at all times while on the roof, placed in an impermeable waste bag (six-mil minimum thickness) or wrapped in plastic sheeting (six-mil minimum thickness), sealed with duct tape and lowered to the ground not later than the end of each work shift.
- The Work Area and perimeter shall be visually inspected for dust, debris and other particulate residue. The Work Area and perimeter shall be repeatedly cleaned by the Contractor or other entity carrying out the work operation until the no Visible Debris criterion is achieved.

- Signs shall be posted in accordance with EPA and OSHA regulations for all regulated areas.
- No visitors, except for the government inspectors having jurisdiction, or Intel employees or their consultants shall be permitted in the work area.
- Equipment in poor condition and/or not in proper working order will be rejected.
- Dirty equipment, material or supplies not free of all visible dust and debris will be rejected.
- Fire extinguishers shall be placed inside and outside containment (one for every 5,000 ft^2).
- Ceiling tile to be reused shall be HEPA-vacuumed **and** wet-wiped on both sides.
- Surrounding objects such as diffusers, light fixture, ceiling grid, etc., should also be wet-wiped **and** HEPA-vacuumed.
- Materials are not to be dropped to the floor.
- Operations that generate an unusual amount of noise shall be performed after normal building operation hours.
- All ACM bags will be carried in water tight carts.
- Maximum elevator loads will be one-thousand (1,000) pounds less than stated capacity.
- Elevator will not be used for any other purpose during off-load of ACM bags.
- All asbestos-related work shall be supervised by a Competent Person.
- All work shall be performed without disturbance to adjacent tenants.
- All work, where feasible, shall be performed using HEPA-vacuums and wet methods.
- Prior to commencement of work, the Abatement Contractor is to provide the Program Coordinator with a negative exposure assessment if one has been performed.
- If an alternative or modified method is used, proper written certification shall be submitted prior to commencement of work.

Filter Leak Testing

- All negative air machines and HEPA vacuums shall have passed filter leak testing (D.O.P.) **at the start of every new project**. .

  The D.O.P. testing and certification shall be performed onsite at the project location. A third party, qualified professional shall perform all D.O.P. testing. The certifications shall be labeled on the machines and certificates posted on-site. All HEPA vacuums shall be D.O.P. re-certified every 30 days if a project lasts longer than 30 days. The certifications shall be included in the final report from the Asbestos Consultant's report to the Property Manager.

Contamination Zone-Regulated Area

- Critical barriers of two layers of polysheeting covering all adjacent windows of roof and anything remaining in the regulated area such as exhausts
- All Emergency Exits shall be marked clearly and all workers shall be informed of the exit locations.
- Abatement Contractor and Asbestos Consultant are to verify that any temporary electrical power has been installed.
- All equipment, tools, ACM bags and other materials are to be removed from roof prior to visual inspection.

Materials

- Fire resistant or non-combustible construction including fire-treated wood shall be required for any temporary structures built for asbestos operations.
- Only 6 mil, fire-retardant polysheeting or heavier, if specified shall be used.
- The entry and exit flaps to work area shall be constructed of clear polyethylene freezer flaps or Z-doors. Freezer flaps or Z-doors must overlap to maintain pressure differential.
- Observation windows shall be made of a clear rigid material (such as Plexiglas or Lexan) free of scratches and obstruction. The windows shall be located, where feasible, to allow viewing of the entire NPE.
- Other materials may be specified.

Decontamination Unit (Decon)

- Decon shall be placed away from the view of building occupants
- Decon unit shall be a three chambered unit consisting of a clean room, shower, and equipment room. A two chambered decon, deleting the shower may be specified.
- Scaffolding used to build decon shall not exceed a working height or 6 feet 6 inches to allow access for ceiling work above decon area.
- All water supply, showers, filtering, heating and drain apparatus shall be placed in leak tight pans.
- Water that may be asbestos contaminated shall be filtered through a one micron filter prior to disposal.
- Hoses used to empty the decon water shall be labeled for such use and **only** used for such use.
- Rubberized pool liners are required under the decon area.
- The Abatement Contractor shall, at the end of the shift, verify that all water sources are turned off and drained, and that any standing water has been cleaned up.
- The Abatement Contractor shall keep the decon in a clean condition.
- Masonite panels shall be placed on all exit paths and traffic areas.

AIR MONITORING

Personnel Exposure Monitoring

- Employers whose employees enter regulated areas shall perform air monitoring in accordance with 8 CCR §1529 (f) to determine employee exposures.
- Employees must receive monitoring results in writing individually or by posting, as soon as possible after the results are received.

Area Air Monitoring

- Daily monitoring of the air inside and adjacent to the regulated area, is required for all Class I, II & III operations.
- One sample is required per five-thousand (5,000) square feet.
- Sampling strategy shall take into account the HVAC system layout, natural drafts, the configuration for the NPE and other factors affecting air flow.
- TEM clearance monitoring is required for all Class I operations and may be required for Class II operations.
- As per Section 1 of this manual, report in writing air monitoring results to the Program Coordinator daily.

Collection and Analysis Methods

Laboratory Qualifications

- Third party laboratory with no corporate or private financial ties
- Participant in NIOSH Proficiency Analytical Testing (PAT)
- Accredited by American Industrial Hygiene Association (AIHA)
- Participant in the National Voluntary Laboratory Accreditation Program (NVLAP)
- Certified by the State of California

Phase Contrast Microscopy (PCM)

- Samples shall be collected and analyzed using the most current version of NIOSH Analytical Method #7400.
- Samples shall maintain chain of custody.
- Samples collected outside NPE returning results greater than 0.01 f/cc:
  - The Asbestos Consultant shall immediately trace the fiber source.
  - The Fiber source shall be minimized by the Abatement Contractor.
  - The sample should be analyzed using TEM to help identify the source of the fibers.
  - If the fiber source is an ACM or unknown, the entire area represented by the sample shall be cleaned and retested using TEM until it passes clearance.
  - Abatement Contractor shall pay for all additional associated costs.
- Samples collected inside NPE returning results greater than 0.30 f/cc:
  - Work shall stop immediately and work area shall be cleaned immediately.
  - Work practices shall be re-evaluated and modified if necessary to prevent reoccurring, elevated fiber counts.

PCM Clearance level

- All clearance air sampling results shall be at or below 0.01 fibers per cubic centimeter (f/cc).
- If any one sample result is above 0.01 f/cc the entire work area must be re-cleaned and tested until the fiber counts for all samples are at or below 0.01 f/cc.

Transmission Electron Microscopy (TEM)

- Samples shall be collected and analyzed using Yamate Level II TEM Analytical method.
- Samples shall maintain chain of custody.
- Samples collected outside NPE returning results greater the 0.015 f/cc:
  - The Asbestos Consultant shall immediately trace the fiber source.
  - The fiber source shall be minimized by the Abatement Contractor.
  - Work shall stop immediately and the entire area represented by the sample shall be cleaned and re-tested using TEM until it passes clearance.
  - Work practices shall be re-evaluated and modified if necessary to prevent reoccurring elevated fiber counts.

Clearance level

- A minimum of 1800 liters of air shall be collected at rate not to exceed 9.5 liters/minute.
- All clearance air sampling results shall be at or below 70 structures per cubic centimeters (s/cc).
- If any one sample result is above 70 s/cc the entire work area must be re-cleaned and tested until the fiber

counts fall at or below 70 s/cc.

General **Lead Abatement Procedures**

A. General Requirements: Work of this section includes, but is not limited to, the following:

B. Providing dust control as required to protect the Contractor's Workers, Owner's staff, visitors/guests, and passers-by from lead exposure. The lead concentration in the air outside of the lead work control area but inside of the Work Area (inside of the construction fence) shall not exceed 10 micrograms per cubic meter (µg/m3). The airborne lead concentration outside of the Work Area shall not exceed the background airborne lead concentration as tested by EnviroNova (HPM) prior to the commencement of any on-site activity.

C. The work includes protecting the site (specifically the soil surrounding the building and landscaping), the building structure, facility, any and all furniture, fixtures, etc., from further lead contamination.

D. The Contractor shall perform employee exposure monitoring as required by Cal/OSHA during the project

E. The following precautions should be taken prior to initiating demolition activities involving any lead-containing material:

1. The Contractor shall not perform any lead-related demolition activities until an initial exposure assessment has been performed and submitted to the Owner's Representative.

2. The Contractor shall install lead dust control measures, lead waste and debris retention areas, worker protection, and decontamination areas in accordance with this Section, the Contractor's work plan, and lead exposure assessment data.

3. Pre-Project Initial Exposure Assessment and Test Section: Prior to performing any lead-related demolition work, the Contractor shall perform an initial exposure assessment as described in 8 CCR 1532.1. The initial exposure assessment shall be performed through the preparation of "Lead-Related Construction Demolition Test Sections", if deemed necessary. The Test Section work shall be performed a minimum of two weeks prior to initiating lead-related demolition work at the building. During work on the Test Section, all Supervisors/Competent Persons shall be certified as Lead-Related Construction Supervisors and all Workers shall be certified as Lead-Related Construction Workers in accordance with 17 CCR, Division 1, Chapter 8.

F. Lead-Related Demolition Scope-of-Work: The Contractor shall remove, package, transport, and properly dispose of the lead-containing and lead-contaminated items referred to in Appendix A for specific locations. Quantities shall be field verified.

G. Exterior lead containing material:

1. Remove or protect bushes and landscaping from the perimeter of the building out to fifteen feet (15') from the base of the buildings as required for soil protection. When necessary, cut the bushes and landscaping flush with the ground. Dispose of the bushes and landscaping as construction debris following removal.
2. Remove, package, transport, and properly dispose of all lead-containing painted exterior components on the buildings including but not limited to exterior wood cladding (siding), door components, window components, fascia boards and roof overhang components. Remove, package, transport, and properly dispose of the lead-containing window glazing located on the buildings. Remove, package, transport, and properly dispose of all lead-containing painted interior doors in the buildings. The Owner has not performed waste characterization sampling of these items. The Contractor shall be responsible for performing waste characterization sampling. All work associated with the removal of the exterior components and interior doors shall be performed in accordance with this section, the Contractor's lead-related demolition work plan, and the procedures utilized during the Test Section work.

3. Remove, package, transport, and properly dispose of all lead-containing painted components located on the interior of buildings. These components include, but are not limited to, gypsum wall and ceiling board systems, wood wallboard, wood base cove, and interior door frame components. The Owner has not performed waste characterization sampling of these items. The Contractor shall be responsible for performing waste characterization sampling. All work associated with the removal of the exterior components and interior doors shall be performed in accordance with this Section, the Contractor's lead-related demolition work plan required by Section 1.8, and the procedures utilized during the Test Section work.
4. The Owner may sample the soil around the perimeter of the buildings. The Contractor is responsible for protecting the soil on the perimeter of the building from becoming contaminated with lead in excess of 350 ppm or established 'baseline' levels – whichever is lower. After completion of the lead-related demolition work, the Owner will again sample the soil. The testing and analysis of the soil samples will require five to eight working days to complete. If the lead concentration in the soil exceeds 350 ppm, or established 'baseline' levels – whichever is lower, the Contractor shall perform the following work at no additional cost to the Owner.
5. The Contractor shall remove the top six inches (6") of soil from the base of the building/ point of work to a minimum distance of ten feet (10') from the point of work and extending out to the perimeter of the Work Area. Contractor shall perform the removal of the soil in two (2) days or less.
6. The waste soil shall be packaged and placed into waste containers in accordance with the requirement of the waste transporter and disposal facility.
7. Contractor shall retain the documentation that EnviroNova that was on-site during the lead-related demolition project to perform perimeter air monitoring.
8. At the completion of the soil removal project, EnviroNova will collect representative waste characterization samples of the soil waste. The soil waste samples will be evaluated for their conformance with the requirements of Title 22 and the requirements of the waste transporter and disposal facility.
9. The testing and analysis of the soil waste characterization samples will require five to eight business days to complete. Contractor shall leave the waste containers on the project site until receipt of the waste sample characterization sample results.

The Lead Specifications are found in the Abatement Project Specification

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General PCB Abatement Procedures

WORK PROCEDURE

A. Furnish all labor, materials, services, and equipment necessary for the complete removal of all PCB/Non-PCB ballasts, fluorescent light bulbs, sealants and adjacent building materials and other hazardous materials and potentially hazardous materials in accordance with Federal, State, and local regulations.

B. Package and mark fluorescent light bulbs and ballasts as required by EPA and DOT regulations and dispose of offsite. Sealants and adjacent building materials must be separately packaged and sent since the concentrations and sources are different.

C. Provide packaging, available from the manufacturer, for the storage of fluorescent light bulbs. Provide 17C or 17H drums for packaging of PCB wastes.

D. Fluorescent light bulbs, and ballasts labeled as "Non-PCB Containing" or "No PCBs", shall be packaged in leak-proof packaging, and be transported under manifest/trip ticket and disposed of for either (a) recycling or (b) disposal in full compliance with local, state and federal regulations. A manifest/trip-ticket or equivalent endorsed by the waste disposal facility or the recycler shall be provided to the HPM within 2 working days of the waste being moved of the site.

E. Smoking: Smoking is not permitted within 50 feet (50') of the control area. Provide and post "No Smoking" signs.

F. Work Operations: Ensure that work operations or processes are conducted in accordance with the applicable requirements of this section, including but not limited to:

1. Obtain advance approval of storage sites.
2. Report spills/leaks to the Owner/Owner's Representative/HPM and maintain a record detailing the circumstances surrounding the leak/spill include the location, material leaked/spilled, estimated quantity, cleanup procedure utilized, and disposition of waste.
3. Maintain a spill/leak kit for immediate cleanup of spill/leaks.
4. Maintain an access log of Workers working in a control area and provide a copy to the District's representative upon completion of the operation.

REMOVAL WORK

A. Establish a control area as specified in paragraph entitled "Control Area". Only personnel briefed on the handling and safety precautions shall be allowed into the area.

B. Work performed in confined spaces shall be performed in accordance with applicable Cal/OSHA requirements.

C. Remove mercury containing bulbs and other devices intact and immediately package for disposal. Handle in a manner that will prevent skin contact.

D. Remove all fluorescent light ballasts that are not marked "Non-PCB containing" or "No PCBs". Place ballasts in DOT approved 17C or 17H drums. Handle PCBs such that no skin contact occurs.

E. Remove all other equipment containing PCBs from site and transport to an approved decontamination facility for final disposal.

F. Removal and off-site disposal of all PCB-containing caulking and adjacent building materials located as PCB bulk product wastes in accordance with 40 CFR 761.62

The PCB Specifications are found in the Abatement Project Specification

Hazardous Materials
Asbestos, Lead and PCBs
Abatement Project Specifications
2118 Milvia Street, Floors 1-3 & Roof
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SUB-SECTION 00
GENERAL ASBESTOS REMOVAL SPECIFICATIONS

INTRODUCTION

These asbestos removal specifications are necessarily general and are intended only to give a description of what is required to adequately complete an asbestos abatement project. The asbestos abatement project is accompanied by a job-specific Abatement Drawings and Hazardous Materials Report (attached as an appendix to this document), which summarizes the procedures, describes the extent and nature of the asbestos removal or abatement, and may detail any special conditions at the job site. These specifications are not intended to cover all variations that may occur, however, a field directive will address unanticipated variations.

TERMS AND DEFINITIONS

The following section is a list of terms and definitions that will be used in this specification.

***Abatement*:** Procedures to control fiber release from asbestos-containing materials (ACM). Includes encapsulation, enclosure and removal.

***Accredited*:** A person who holds a current certificate of training or updated certificate of continuing training as required by Federal and State regulations.

***AHERA*:** The Asbestos Hazard Emergency Response Act of 1986, also referred to as the Asbestos-Containing Materials in Schools; Final Rule and Notice, and 40 CFR Part 763

Asbestos: The asbestiform varieties of serpentine, Chrysotile, riebeckite (crocidolite) cummingtonite-grunerite, anthophyllite and actinolite-tremolite

***Asbestos-Containing Construction Material (ACCM)*:** Term used by Cal/OSHA to describe construction materials that contain asbestos in amounts greater than one-tenth of one percent (0.1%) either alone or mixed with fibrous or non-fibrous materials.

***Asbestos-Containing Material (ACM)*:** Any material or product that contains more than one percent (1%) asbestos as determined by Polarized Light Microscopy (PLM) analysis, or assumed to contain greater than 1 percent asbestos.

***Airlock*:** A system for permitting ingress or egress without permitting air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways at least three feet (3') apart.

***Air Monitoring*:** The process of measuring the fiber content of a specific volume of air in a stated period of time in an appropriate location.

Ambient Air: The air outside a building or structure OR the air as it normally exists in a space prior to activity.

Amended Water: Water to which a surfactant has been added.

***Authorized Visitor*:** Owner, EnviroNova, or representative of any regulatory or other agency having jurisdiction over the project.

Cal/OSHA: California Division of Occupational Safety and Health

Clean Room: An uncontaminated area or room that is part of the worker decontamination unit, with provisions for storage of uncontaminated clothing and equipment.

***Containment*:** The temporary, polyethylene-lined, enclosure structure erected to control the release of asbestos fibers to the ambient environment.

***Contractor*:** An asbestos abatement contracting company and its Workers, which employs a full-time Contractor who is certified to provide asbestos abatement services, and whose Workers hold current applicable accreditation.

***Critical Barrier*:** A unit of temporary construction that provides the only separation between the asbestos Work Area and an adjacent area. This includes the decontamination unit, perimeter walls, ceilings penetrations and any temporary barriers between the Work Area and outside environment.

***Curtained Doorway*:** A device to allow entry or exit from one room to another while permitting minimal air movement between the two rooms. Typically constructed by placing two overlapping sheets of polyethylene over an existing or temporary framed doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway.

CSLB California Contractors State License Board

***Decontamination Unit*:** A series of connected rooms, each room being an airlock, with curtained doorways between any two adjacent rooms, for the decontamination of workers or of materials and equipment.

***Demolition*:** The wrecking or taking out of any nonstructural building material, casework, surface mounted items or surfaces of a facility together with any related transportation and disposal, and any related razing, removing, or stripping of asbestos products.

Debris Box/Dumpster: Synonymous with waste container. All debris boxes/dumpsters used on this project shall be hard sided including a hard lid, locked at all times when not in use and placed in an Owner designated location.

DOP: Dioctylpthalate particles which are used to test the efficiency of HEPA-filtration equipment. Substitutes such as Di [2-ethyhexyl] phthalate, PAO (Emery 3004), DOS (Dioctyl-sebacate) may be utilized with prior written permission from the Project Manager.

DOSH: California Department of Industrial Relations, Division of Occupational Safety and Health

DOT: US Department of Transportation

***Encapsulant*:** A liquid material that can be applied to ACM or surfaces stripped of ACM and that controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant). When used, care must be taken that any re-insulation material will adhere to the encapsulant.

***Encapsulant (Lock-down)*:** A liquid designed to mist the air within a containment area after the containment has passed visual clearance by the HazMat Doc Project Manager. Lock-down encapsulant is designed to bind asbestos fibers together and create a sticky surface, allowing asbestos fibers to adhere to it.

***Encapsulation*:** All herein specified procedures necessary to coat surfaces from which ACM has been removed with sealing substance meeting applicable government standards. Encapsulation may also be referred to as "lock-down" encapsulation.

***EnviroNova*:** An environmental consulting company retained by Owner, which employs full-time employees who are qualified to perform asbestos consulting services.

EPA: US Environmental Protection Agency.

***Equipment Decontamination Unit*:** A decontamination unit for materials and equipment, typically consisting of a designated area of the Work Area, a washroom, holding area, and an uncontaminated area.

***Equipment Room*:** A contaminated area or room that is part of the worker/equipment decontamination unit, with provisions for storage of contaminated clothing and equipment.

***Friable ACM*:** Asbestos-containing material that can be crumbled, or reduced to a powder by ordinary hand pressure or materials assessed as friable by an accredited asbestos abatement inspector.

***Fixed Object*:** A piece of equipment or furniture in the Work Area that cannot or will not be removed from the Work Area, by Owner's decision.

Full Containment/Enclosure: Full containment/enclosures shall be constructed of two layers of 6-mil polyethylene sealing all surfaces, in all locations not being abated during the current phase of abatement. The sheeting must be secured in a manner that shall maintain the integrity of containment throughout removal and testing.

Glove bag Technique: A method with limited applications for removing small amounts of friable asbestos-containing material(s) from ducts, short pipe-runs, valves, joints, elbows and other non-planar surfaces. The glove bag assembly is a manufactured or fabricated device consisting of a glove bag (typically constructed of 6-mil transparent polyethylene or polyvinylchloride sheeting), two inward projecting long sleeves, an internal tool pouch and an attached. Labeled receptacle for asbestos waste. The glove bag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process. Glove bags must meet the specification requirements for glove bags as listed in 8 CCR 1529. All workers who are permitted to use the glove bag technique must be trained, experienced and skilled in this method. All techniques and procedures employed by the Contractor shall be approved by the HazMat Doc Project Manager.

***HEPA Filter**:* A High Efficiency Particulate Air (HEPA) filter that traps and retains at least 99.97% of mono-dispersed particles 0.3 microns in diameter or larger.

***HEPA-Filtered Exhaust Unit*:** An exhaust fan that draws contaminated air through a HEPA filter and exhausts the filtered air to the outside of the building.

***HEPA-Filtered Vacuum*:** High efficiency particulate air filtered vacuuming equipment with a filter system that collects and retains 99.97% of mono-dispersed particles 0.3 microns in diameter or larger.

***Holding Area*:** A room between the washroom and an uncontaminated area in the equipment decontamination unit. The holding area has an airlock constructed at its entrance from an uncontaminated area.

HVAC: Heating, ventilation and air conditioning system

Manometer: Instrument for measuring the static air-pressure differential across a barrier. This project requires at least one properly calibrated and fully functional Manometer at each containment. Manometer units shall, at a minimum, be factory calibrated once a year.

Mini-Containment/Enclosure: Mini-enclosures may be used where glove bag setups are not feasible. The use of these must be pre-approved by EnviroNova. Mini-enclosures shall be constructed of 6-mil polyethylene (attached with tape and/or glue to walls and floors) and shall be small enough for a maximum for two workers who can enter the enclosure one at a time, complete the abatement process, pass out the debris (appropriately contained) and exit. The workers shall have available a change room contiguous to the Work Area where they can remove their coveralls prior to leaving the area.

Monitoring: May include

(i) Visual inspection for the presence of visible emissions; or

(ii) Air monitoring performed in accordance with accepted methods;

(iii) Collecting core samples or encapsulated or bridged materials;

(iv) Collecting bulk samples of soil during and following abatement;

Moveable Object**:** A piece of equipment or furniture in the Work Area that can be removed from the Work Area.

Non-friable ACM**:** Asbestos-containing material that does not crumble, or become reduced to powder by ordinary hand pressure, or material that has been assessed as non-friable by an accredited asbestos abatement inspector.

Owner**:** Individual or entity that owns the property and its Workers, representatives or agents.

PLM: Polarized Light Microscopy. Asbestos analysis of bulk material via EPA 600/R-93/116 Method using Polarized Light Microscopy.

Pressure Differential: A condition whereby the containment is maintained at a pressure differential of at least minus 0.02 inches of water relative to the adjacent unsealed areas.

Project: Surveys, investigation and/or abatement of buildings designated by the City of Hayward to complete the demolition of said buildings for the Route 238 Bypass Project. Each of these individually or as a whole may be referenced as said Project herein.

Regulated Area: An area established by a Contractor to demarcate areas where airborne concentrations of asbestos exceed, or could potentially exceed, the PEL.

Regulations: ALL relevant Local, State and Federal Regulations

Removal: All specified procedures necessary to strip all ACM from the designated areas and dispose of these materials at an acceptable site.

Scope-of-Work: Project specific removal tasks to be utilized in conjunction with these specifications. If a conflict arises the most stringent requirement shall apply.

Shower Room**:** A room in the Worker decontamination unit that is located between the clean room and equipment room, and is equipped with a functional shower stall with hot and cold water and a waste water filtering system.

Surfactant**:** A non-toxic, non-flammable, chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

Supervisor**:** An employee of Contractor who is accredited as a Supervisor for Asbestos Abatement Projects, qualifies as a competent person on asbestos abatement projects, and holds current applicable accreditation.

Structural Member: Any load-bearing member, such as a beam, load-bearing walls or non-load bearing members such as ceilings and non-load-bearing walls.

Test Section: A section of the abatement area where the lead abatement contractor implements stabilization measures to ensure that a particular area is stable enough to perform abatement.

TEM: Transmission Electron Microscopy performed by EPA 40 CFR part 763 Final Rule (AHERA). Per AHERA specifications a Level II analysis on all AHERA jobs.

Visible Emissions: Any emissions, whether containing particulate material or not, that are detectable without the aid of instrumentation. Not including condensed UNCOMBINED water vapor.

Waste Containers: Synonymous with debris boxes/dumpsters. All waste containers used on this project shall be labeled, hard sided including a hard lid, locked at all times when not in use and placed in an Owner designated location.

Washroom**:** A room between the Work Area and the holding area in the equipment decontamination unit. The washroom has an airlock between it and the holding area.

Wet-Clean**:** The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools that have been dampened with amended water, and by afterwards disposing of these cleaning tools as asbestos-containing waste.

Work Area**:** The area of a building where asbestos-containing materials will be, or are being, removed or abated.

Worker: An individual who has successfully completed an initial EPA and/or State approved accreditation course and who has maintained that certificate by attending mandated refresher training and possesses valid and current AHERA-accreditation documents.

Worker Decontamination Unit**:** A decontamination enclosure system for Workers, typically consisting of a clean room, a shower room, and an equipment room.

ABBREVIATIONS AND ACRONYMS

The following acronyms or abbreviations as referenced in this contract document are defined to mean these associated names. Both names and addresses are subject to change, and are believed to be, but are not assured to be, accurate and up-to-date as of date of this contract document:

ACM	Asbestos-Containing Materials >1%
ACCM	Asbestos Containing Construction Material greater than $1/10^{th}$ of 1 percent asbestos (i.e. 0.10% or greater)
ACRM	Asbestos-Containing Roofing Materials
AHERA	Asbestos Hazard Emergency Response Act; refers to EPA regulation 40 CFR Part 763 entitled "Asbestos-Containing Materials in Schools" in Vol. 52, No. 210, October 30, 1987.
AIA	American Institute of Architects
ASTM	American Society for Testing and Materials
ASHRAE	American Society for Heating, Refrigerating, and Air Conditioning Engineers
ASTM	American Society for Testing and Materials
Cal/OSHA	California Division of Occupational Safety and Health
CFR	Code of Federal Regulations
CGA	Compressed Gas Association
CS	Commercial Standard of NBS (U.S. Dept. of Commerce)
CSLB	Contractors State Licensing Board (California)
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency and by inference the local air pollution control agency or any other entity designated as a representative of the EPA

GSA	General Services Administration
HEPA	High Efficiency Particulate Air
HPM	Hazmat Project Manager
HVAC	Heating, Ventilating and Air-Conditioning
SDS	Material Safety Data Sheet
NBS	National Bureau of Standards
NEC	National Electrical Code (by NFPA)
NFPA	National Fire Protection Association
NESHAPs	National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology, U.S. Dept. of Commerce
NVLAP	National Voluntary Laboratory Accreditation Program
OSHA	Occupational Safety & Health Administration
PAT	NIOSH Proficiency Analytical Testing Program
PCM	Phase Contrast Microscopy - Analytical Method used to determine airborne concentrations of asbestos fibers according to NIOSH Method 7400
PEL	Permissible Exposure Limit - OSHA allowable 8 hour TWA personal exposure above which Workers are required to wear appropriate respiratory and personal protective equipment.
PLM	Polarized Light Microscopy - Analytical method used to determine asbestos content in bulk material samples.

Psi	Pressure expressed in pounds per square inch
ppm/v	Unit as expressed in parts per million by volume
STEL	Short Term Exposure Limit - OSHA allowable 30 minute TWA personal exposure above which Workers are required to wear appropriate respiratory and personal protective equipment
TEM	Transmission Electron Microscopy - Analytical method used to identify and determine airborne concentrations of asbestos fibers according to EPA AHERA protocol.
TSCA	U.S. Toxic Substances Control Act of 1976
TWA	Time-Weighted-Average - Average unit of exposure to a substance over a general period of time
UL	Underwriters Laboratories

SUB-SECTION 01 GENERAL REQUIREMENTS

1.1 GENERAL

1.1.1 Description of Work and Contractor Responsibilities

This specification covers removal and disposal of materials identified as Asbestos-Containing Material (ACM) and/or Asbestos Containing Construction Material (ACCM) in independently prepared bulk material analysis reports, and removal and disposal of related materials and all other identified hazardous materials.

A. Furnish all labor, tools, materials, equipment, employee training and testing, permits, waste disposal services necessary for and reasonably incidental to the completion of removal and disposal of all Asbestos-Containing Material (ACM) and/or Asbestos Containing Construction Material (ACCM) and all other identified hazardous materials from within the subject Buildings as denoted in the attached Scope-of-Work section of these documents. All work shall be performed in accordance with prevailing Local, State and Federal Regulation, including but not limited to the US Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the State of California Division of Occupational Safety and Health (DOSH), the State of California Department of Industrial Relations (DIR), the recommendations of the National Institute of Occupational Safety and Health (NIOSH) and any and all other regulations. Where a conflict or overlap of regulations occurs, the MOST stringent shall apply.

B. The asbestos abatement work as specified herein shall be performed as required to accommodate air clearance testing of all interior work sites where standard negative air enclosures have been established, and satisfactory visual inspections for asbestos abatement which takes place on exterior building components. None of the negative air enclosures shall be removed until visual inspections and clearance testing results are satisfactory for the contained work site(s), nor the barricades removed until the final visual inspections are satisfactory for the exterior removal sites inspected.

C. This is a calendar day contract. Weekends, holidays, etc., are regular working days for the purposes of this contract. The specific daily work schedules and timing for each area of asbestos-containing materials abatement in this project shall be coordinated with, and approved by the Owner, and then specified in the Contractor's asbestos abatement plan, prior to commencing work.

D. Description of Asbestos-Containing Materials to be Removed. Known ACM/ACCM that must be removed under this contract are listed in the attached Appendix. Determination of the actual quantities of these ACM/ACCM and related ACM/ACCM debris shall be the responsibility of the selected Contractor. In addition to these ACM/ACCM described below, the selected Contractor shall be responsible for the proper abatement of any incidental ACM/ACCM that is necessary to accomplish work of this project. Contractors who chose to submit a bid to perform this work, shall estimate quantities of listed as well as incidental ACM/ACCM by a visual assessment of the ACM/ACCM within the building(s) as illustrated in the attached Appendix.

E. Quantity of Asbestos-Containing Materials. The actual determination of quantities and measurements of the asbestos-containing materials, related debris and contaminated materials within this building will be the responsibility of the Contractor. The Contractor shall deal with any encounters of these asbestos-containing materials, related debris and contaminated materials in full accordance with all applicable

federal, state and local laws, rules and regulations. All related costs shall be included in the basic contract price. If, during the course of work, the Contractor encounters other materials in these areas or other areas not specified above suspected to contain asbestos, which could require disturbance, clean-up or removal, they shall halt work which may disturb the suspect materials and immediately notify the HPM for a positive determination of asbestos content and instruction as to procedure.

F. Suspect Asbestos-Containing Materials. For any types of extensive, non-incidental asbestos-containing materials (ACM/ACCM) which are encountered during construction, and which are not specified above, if so directed by the HPM, the Contractor shall remove and dispose of such materials according to the methods specified herein by appropriate change order. All such materials shall be quantified by the HPM and the cost agreed upon by the Contractor and the Owner prior to commencing any asbestos abatement work.

G. Construction Schedule. The construction schedule is noted elsewhere in these documents as the allowable working days. The schedule may be corrected by addendum or otherwise in writing by the owner to the Contractor. Work shall be accomplished in accordance with this schedule. Any delay in the completion of the work denoted in the attached Scope-of-Work may subject the Contractor to financial and other damages as denoted in the bid section of these documents.

H. Description of Work. Asbestos abatement work includes the complete and proper removal and disposal of all asbestos-containing materials, related ACM/ACCM debris and contaminated materials within the areas identified and using the procedures specified herein.

I. Description of Work Sites. For each separately enclosed interior work site, provide a decontamination unit, negative air filtration system, negative pressure monitoring device, and all other requirements of these specifications.

J. Project Conditions. Specific Work Areas of the building will not be occupied by the Owner or the general public during the work performed under this contract. The building is to be demolished. If the Contractor hires any Sub-Contractors (Subs) to perform any part of this work, all such Subs shall be notified of the locations of asbestos abatement activities and the schedule of such activities in accordance with these specifications, and as required by OSHA 29 CFR 1926.1101 (k). The Contractor shall coordinate with the Owner all activities such as waste load-out or periods of electrical power outage or usage that could affect nearby Work Areas or adjacent buildings. Sources for electricity and water will be discussed at the pre-bid conference.

The Owner will not provide electricity, water and sanitation (toilet) facilities at the Owner's discretion. It is the Contractors' responsibility to furnish all power, water and sanitation requirement for the project. All costs associated with this are to be built in to the Contractors base cost.

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1.1.2 Related Work

A. Related work includes all work necessary for successful completion of removal and disposal of ACM/ACCM but not directly involving ACM/ACCM. This work includes but is not limited to proper cleaning and/or disposal of contaminated and non-contaminated materials.

B. Related work includes the maintenance of daily work logs by Contractor on the job site. These work logs shall be supplied to EnviroNova by Contractor and must include:

1. The name of each person, and description of the type of respiratory protection worn by each person entering containment or Work Area.

2. Descriptions of meetings or discussions regarding the job, special or unusual events, records of daily containment inspections as required by 1926.1101(o)(2), records of waste removal from containment, the chart from the recording Manometer, and air monitoring results.

3. EnviroNova shall examine Contractor's daily work log for completeness, and sign each page at the end of each shift.

4. A copy of this daily work log, signed by Supervisor must be submitted to EnviroNova at the end of the project as a condition for completion.

1.1.3 Project Completion

The project shall be deemed complete and Contractor released upon satisfaction of all terms and conditions of this specification, including:

1. All required forms, logs, and receipts and satisfactory completion of air testing and site inspection by EnviroNova.

2. A release letter shall be provided to Contractor by EnviroNova at this time.

1.1.4 Work Schedule

Upon receipt of notification to proceed with a specific project by Owner, Contractor must file all notices to the applicable regulatory agencies, and obtain all required permits to perform the asbestos abatement. Contractor must submit to Owner a notarized affidavit that notifications have been sent to the applicable regulatory agencies, as well as a copy of the notification of asbestos abatement. Upon commencement of work, Contractor must complete the project within the time specified in the schedule.

1.1.5 Contractor Responsibilities

A. Contractor represents that Contractor and its Workers are experts in asbestos removal with full knowledge of, and compliance with, all applicable Federal, State, and Local rules, regulations, and guidelines governing asbestos removal as well as state-of-the-art removal techniques.

B. Contractor must furnish all permits, labor, material, services, insurance, tools, equipment, and notifications in accordance with EPA, OSHA, State, and all other applicable agencies to complete removal of ACM/ACCM.

C. Contractor must attend a pre-construction meeting to be held at a mutually agreeable time and date. Attending this meeting will be Owner, Contractor, Supervisor, and EnviroNova.

1. Abatement Contractor's Asbestos and Lead Supervisor assigned to Project must attend this meeting.

2. All pre-construction submittals by Contractor will be reviewed at this meeting. Contractor shall be prepared to discuss and submit plans or documentation for:
   a. Preparation of Work Area;

   b. Personal protective equipment;

   c. Historical air monitoring data that shows levels of airborne fibers on similar jobs in the past;

   d. Employee training certificates;

   e. Decontamination procedures;

   f. Abatement methods and procedures;

   g. Handling and disposal procedures for ACM/ACCM;

   h. Final decontamination and cleanup procedures;

   i. Sequence and schedule of work;

   j. Emergency procedures;

   k. Respiratory Protection Program including evidence of respiratory protection training and current respirator fit tests;

   l. Owner's Safety requirements; and

   m. Any site specific Owner requirements;

D. There will be a final walk-through of the building and discussion of plans, anticipated problems, and areas of special concern.

E. Should Contractor fail or be unable to execute the contract and complete the work for any reason, then Contractor shall be penalized in accordance with agreements stated in contract documents.

F. Owner retains the right to stop work by and/or dismiss Contractor for any breach of specified procedures, including but not limited to airborne fiber levels exceeding 0.01 fibers/cc outside the containment. Dismissal of Contractor may also result in claims against Contractor in accordance with agreements stated in contract documents.

G. Inspections: Inspections of Work Area will be made by EnviroNova at scheduled intervals during the course of the project. It is Contractor's responsibility to ensure that:

1. Work Area is initially cleaned and properly prepared for removal of ACM/ACCM.

2. Asbestos-containing materials are being properly removed and disposed.

3. Workers of Contractor are properly protected.

4. All asbestos-containing materials have been removed and disposed in accordance with the procedures contained in these specifications and Scope-of-Work.

H. The inspections will merely confirm that these conditions have been met. It is the sole responsibility of Contractor to correct any subsequent discoveries of inadequate initial cleaning, preparation, work procedures, or remaining ACM/ACCM encountered after an inspection, regardless of the outcome of such an inspection.

I. Supervisory Personnel. Contractor must have an accredited Supervisor at each job site at all times, from mobilization to completion. Failure to have a Supervisor present shall result in termination of all asbestos abatement activities for the remainder of the day, or until an accredited Supervisor is again present. Contractor shall not begin work until an accredited Supervisor is present, and shall cease all work when Supervisor leaves the work site.

J. Security of Containments. Contractor must secure all entrances to containments with a lockable plywood door. The door will be locked with a combination lock. The combination will be given to EnviroNova and Owner's Security Representative. When decontamination units are located on the exterior of buildings, Contractor must cover the exterior portion of decontamination unit with 2" plywood, or suitable optional material to be approved by EnviroNova and Owner.

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1.2. SUBMITTALS, NOTICES, RECORDKEEPING, AND REFERENCES

1.2.1 Submittals

Note: At a minimum, the Contractor performing any and all work as part of this contract must have a California Contractors State License Board (CLSB) 'B' License Classification with an 'ASB' Certification AND be a California Department of Industrial Relations, Division of Occupational Safety and Health (DOSH) registered Contractor to perform any and all work as part of this contract. Copies of valid and current CSLB license and DOSH registration certificate are to be provided by the Contractor as part of the pre-job submittal. Contractors having endorsements, riders or qualifiers on any of their licenses such as (but not limited to) 'for bidding purposes only' etc. are ineligible to perform work as part of this contract.

A. Submit the following to the HPM for approval within ten (10) days of receiving the "Notice to Proceed" or at least ten (10) working days prior to the start of work. These submittals are in addition to those required in any other section(s) or sub-section(s) of these documents. This document shall be submitted by the Contractor performing the work and not by any other.

B. Notifications. All notifications shall be current and valid throughout the duration of the project. Any material changes to the notification, i.e., the quantity of materials being removed, the physical materials being removed, the duration of the project, etc. shall require revisions to the regulatory agencies, with copies provided to the HPM on site. Copies of the written notification and confirmations at least to/from the following regulatory agencies will be required:

    1. Regional EPA and/or the local Air Quality Management District;
    2. California Division of Occupational Safety and Health (Cal/OSHA) - Temporary Worksite Notification for Asbestos and Methylenedianiline-related work;
    3. Air Resources Board Office *(if 1a above is not applicable);*
    4. Local Authority charged with the responsibility for the enforcement of Occupational Health & Safety, if any *(if 1b above is not applicable);*
    5. Any other agency as and when necessitated by prevailing regulation(s).

C. Waste Haulers – copies of:

    1. Identification of the Waste Hauler(s) for both Hazardous and Non-Hazardous asbestos waste for this Project;
    2. California Department of Toxic Substances Control (or DTSC) Hazardous Waste Transporter registration for each Waste Hauler;
    3. California Department of Motor Vehicles (DMV) Motor Carrier Permit for each Waste Hauler;
    4. U.S. Department of Transportation (DOT) Registration and U.S. Environmental Protection Agency (EPA) acknowledgement of Notification of Hazardous Waste Activity for each Waste Hauler *(only required if waste is to be transported out of State)*;
    5. Statement indicating that all waste generated on this specific site shall be transported by/disposed of by licensed, insured and certified personnel/locations; and
    6. Statement that the types of Waste Containers being used for this Project will be accepted by the Waste Hauler(s) for the storage and transport of both Hazardous and Non-Hazardous waste.

D. Landfills – copies of:

1. Identification of the landfill(s) to be used for the disposal of both hazardous and non-hazardous asbestos containing waste generated at the project site;
2. Permits for the landfill(s) to be used for the disposal of both hazardous and non-hazardous asbestos waste generated at the project site;
3. Identification of the types of waste accepted at the landfill(s);
4. Identification of the types of waste profiling required by the landfill(s); and
5. Statement that the types of Waste Containers being used for this project will be accepted by the Landfill(s) for both hazardous and non-hazardous waste.

E. Licensure:

1. Current California Contractors State License Board (CSLB) License (minimum requirements are Class B and C-22 license) for any and all Contractor(s) or sub-contractor(s) involved in any facet of asbestos related work enumerated as part of this project;
2. Copy of the registration with the Division of Occupational Safety and Health, (Cal/OSHA) endorsement for Asbestos (ASB) work for any and all Contractor(s) or sub-contractor(s) involved in any facet of asbestos related work enumerated as part of this project; and
3. NOTE: Contractors having endorsements, riders or qualifiers on any of their licenses such as (but not limited to) 'for bidding purposes only' etc. are ineligible to perform work as part of this contract.

F. Work Plan. A detailed written asbestos work plan including, but not limited to, the following:

1. Identification of all Asbestos Scope-of-Work items that are part of this project;
2. Identification of entire work sequence (schedule) for this project, including specifics of materials being removed/stabilized and the correlation between Work Areas and types of work (Asbestos, Lead, PCB, etc. as applicable);
3. Identification of abatement duration;
4. Identification of dust control measures;
5. Identification of Work Area preparation;
6. Identification of construction of decontamination enclosure systems;
7. Identification of demarcation protocols. i.e., installation of barrier tape, barrier fence, asbestos signage, etc.;
8. Identification of Work Area isolation protocols;
9. Identification of Site specific asbestos containing materials removal procedures;
10. Identification of asbestos-containing/contaminated debris cleanup and disposal procedures;
11. Identification of personal protection equipment to be utilized;
12. Identification of waste handling, storage and disposal procedures; and
13. Identification of construction of chutes, if required for this project.

G. HEPA Vacuums, HEPA Differential Pressure Unit air filtration devices, HEPA Filters and other local exhaust ventilation equipment. – copies of:

1. Manufacturer's certification that any and all HEPA Vacuums, HEPA Differential Pressure Unit air filtration devices, HEPA Filters and other local exhaust ventilation equipment to be used on this Project conform to ANSI Z9.2-79.

2. Notification that required onsite testing has been scheduled for any and all HEPA Vacuums, HEPA Differential Pressure Unit air filtration devices, etc., to be used on this Project, to ensure that the filtration efficiency meets the criteria for HEPA-filtration devices, i.e., 99.97% efficiency at arresting mono-dispersed particulate matter greater than 0.03 micrometers in diameter.

H. SDS – Contractor shall submit copies of the Material Safety Data Sheet, fire retardant certification or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for each surfactant, encapsulating material, spray glue, mastic removal agent, plastic sheeting, adhesive/duct tape, etc. or other chemicals/products for use on this Project, including the specific Worker protective equipment proposed for use with the material indicated.

I. Personnel Documentation – copies of:

1. Identification of the Project's Asbestos Related Demolition Supervisor/Competent Person who meets the requirements of 29 CFR Part 1926.1101 and 8 CCR Part 1529 and is experienced in administration and supervision of asbestos abatement projects, including work practices, protective measures for building and personnel, disposal procedures, etc.

2. Current and complete documentation that the Contractor's personnel performing asbestos removal, disposal, etc., operations have received training which meets the criteria of Federal EPA Model Accreditation Plan (40 CFR Part 763, Subpart E, Appendix C). Training certification shall be provided prior to the start of work involving asbestos abatement, for all of the Contractor's Workers, forepersons, and Asbestos-Related Demolition Supervisors/Competent Persons. Training shall meet the requirements of 29 CFR Part 1926.1101 and 8 CCR Part 1529 and the criteria of the Federal EPA Model Accreditation Plan (40 CFR Part 763, Subpart E, Appendix C). Training shall be provided prior to the time of job assignment and, at least, annually. Training will be compliant with all current Cal/OSHA requirements.

3. Provide as part of the pre-job submittal a letter from the Contractor, signed by a responsible and authorized officer of the Contractor's company certifying the following – "This is to certify that all our personnel who may be exposed to airborne asbestos fibers are subject to current and valid medical monitoring in accordance with 29 CFR Part 1926.1101 and 8 CCR Part 1529 and they will receive continued medical surveillance, including monitoring their ability to work while wearing required respiratory protection without suffering adverse health effects as required by 29 CFR Part 1926.1101 and 8 CCR Part 1529 and by state and local regulations pertaining to such work. Furthermore, we certify that all relevant records shall remain valid and current throughout the project and that historical records will be retained by us, in accordance with 29 CFR Part 1926.1101." The Contractor may issue this letter and identify and list (by name) all of their Workers who will be on site for this project or, alternatively issue an individual letter per employee.

4. Current and complete documentation of respirator fit-testing for Contractor, Workers and agents who must enter the Work Area. This fit-testing shall be in accordance with qualitative procedures as required by OSHA regulations or be quantitative in nature.

J. Respirators and Filters – copies of manufacturer's documentation and certification of NIOSH approvals for respiratory protective devices utilized on site, including manufacturer's certification of NIOSH approval of respirator cartridges (organic vapor, acid gas, mist, dust, high efficiency particulate) and High Efficiency Particulate Air (HEPA) filtration capabilities for all cartridges and filters.

K. Testing Laboratory. Submit the name, address and telephone number of the testing laboratory selected for analyzing personal air monitoring filters along with copies of certification that persons counting the samples have successfully completed NIOSH course #582 or a proven equivalent, that the lab has been judged proficient by successful participation in the National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing (PAT) Program.

L. Site Specific Documentation – copies of:

1. Identification of Work Area(s) at the site;
2. Identification of the nearest medical facility and route map/directions to the medical facility;
3. Emergency Contact Information and numbers for Emergency services as well as the Contractors' emergency contact personnel and information;
4. Identification of on-site emergency meeting location; and
5. Identification and procedure for personnel accounting during an emergency.

M. Contractor General Documents – copies of:

6. General Injury & Illness Prevention Program in compliance with 26 CCR 3203;
7. General Emergency Action Plan in compliance with 26 CCR 3220;
8. General Fire Prevention Plan in compliance with 26 CCR 3221;
9. Respiratory Protection Program in compliance with 26 CCR 5144; and
10. Hazardous waste manifests, non-hazardous waste data forms, trip tickets and disposal receipts for asbestos waste materials removed from the Work Area must be received within 24 hours of the transport.

N. Documents to be provided on-site throughout the duration of the project:

1. Provide on a DAILY basis, prior to the start of the shift, results from the personal air samples collected during the abatement process of the prior shift.
2. Provide on a DAILY basis, prior to the start of the shift, copies of the containment entry log pertaining to the abatement process of the prior shift.
3. Provide on a DAILY basis, prior to the start of the shift, copies of the Manometer logs pertaining to the abatement process of the prior shift.
4. Copies of Safety Data Sheets (SDS) for solvents, encapsulants, wetting agents, neutralizers and any other chemicals/products used on site and replacement materials, as necessary.
5. Upon completion of all asbestos abatement activities, submit to the HPM, documentation that includes, without limitation, the following:
6. Work Area entry/exit logbook. The logbook must record the name, affiliation, time in, and time out for each entry into the work site;
7. Safety Data Sheets (SDS) for solvents, encapsulant(s), wetting agents and replacement materials, as necessary;

8. OSHA required personal air monitoring results;
9. Accident/incident reports where injury or damage has occurred on or to the client's property, if any;
10. Safety Meeting Records;
11. Daily Reports and Containment Manometer Log(s); and
12. Personnel documents for any and all personnel on site at any time during the project.

1.2.2 Notices to Contractor

The following section contains general notices applicable to Contractor for all asbestos abatement work for Owner.

A. Employee Behavior

1. All Contractor's Workers shall be freshly shaved on a daily basis prior to the commencement of each work shift. The Hazmat Project Manager can direct the shift Supervisor to have any and all Workers removed from the work site if the Hazmat Project Manager determines that Workers' facial hair may impede an adequate respirator seal.

2. Contractor must provide its Workers with a written policy of drug and alcohol abuse. No employee of Contractor shall be allowed to remain on Owner's property who is intoxicated by drugs (substance abuse) and/or alcohol, or who is observed using drugs or alcohol on Owner's property.

3. Contractor is expected to enforce its drug and alcohol abuse policy at all times while conducting business.

4. Weapons and other hazardous, dangerous, or otherwise disruptive items in the possession of Contractor or its Workers are not allowed on Owner's property.

5. Contractor and its Workers are required to display good manners at all times while on Owner's property. Complaints to EnviroNova or Owner regarding harassment, threatening behavior, poor personal hygiene, or use of profanity or offensive language by any employee of Contractor may result in the suspension of abatement activities until the behavior problem is corrected or employee is removed from Owner's property.

B. Performance Standards:

Contractor shall perform all asbestos removal using techniques and procedures recognized by the asbestos removal industry as being safe and effective in the control of fiber release during removal of ACM/ACCM. Contractor is expected to perform all removal, cleaning, and disposal operations in a manner that would meet final air clearance standards for analysis by Transmission Electron Microscope (TEM).

C. Pay Requests: All requests for payment by Contractor must be submitted to the Owner directly.

D. Analytical and Test Results:

1. Results of bulk sample analyses of ACM/ACCM pertaining to the scope of the asbestos abatement projects are available from Owner or EnviroNova at Contractor's request.

2. Results of background and previous air monitoring tests made by EnviroNova prior to commencement of work will be available from EnviroNova upon request prior to the beginning of asbestos removal project.

3. Results of final air tests analyzed by phase contrast microscopy (PCM) will be made available to Contractor within, at least, 24 hours of collection of the sample. Results of final air tests analyzed by transmission electron microscopy (TEM) will be made available within, at least, 48 hours of completion of collection of the sample. EnviroNova will make every reasonable effort to obtain these test results in a time and manner suitable to Contractor's work schedule.

E. Royalties and Patents:

All fees, royalties, and claims for any invention, or pretended invention, or patent on any article, material, arrangement, appliance or method that may be used upon or in any manner be connected with the construction of this work or appurtenances are hereby included in the prices stipulated in this contract for said work; Contractor hereby expressly binds himself or itself to indemnify and save harmless Owner from all such claims, fees, and from any and all suits and actions of every name and description that may be brought against Owner on account of any such claims, fees, royalties, or costs for any such invention or patent, and from any and all suits or actions that may be brought against Owner for the infringement of any and all patents or patent rights claimed by any person, firm or corporation.

F. Indemnification:

Contractor agrees to indemnify, defend, save and hold harmless Owner from all claims, demands, liabilities, and suits of any nature whatsoever to the extent they arise out of, or are due to the negligent or wrongful act or omission by Contractor or its Workers.

1.2.3 Record keeping

A. For each building where, ACM/ACCM has been removed, all records concerning removal of asbestos-containing materials shall be kept and a copy of these records given to EnviroNova at the completion of the asbestos removal project. EnviroNova shall submit all documentation to Owner.

B. For each specific asbestos removal project, Contractor shall provide EnviroNova with a written description of the asbestos removal measure that shall include:

1. Methods used;
2. Location of removal project;
3. Start and completion dates;
4. Names and addresses of all Contractors (and sub-contractors) involved in the activity;
5. State Asbestos Abatement License number; and
6. The name and location of the disposal site.

C. Furnish to EnviroNova a copy of training records for each Worker used by Contractor that shall include:

1. The person's name and job title;
2. Date of completion of training;
3. Location of the training; and
4. Number of hours of training.

D. For each asbestos removal project, the name, signature, state of accreditation, and accreditation number of each person performing the removal shall be recorded and given to EnviroNova.

E. For each asbestos abatement project performed for Owner, Contractor shall certify that all asbestos-containing materials related to the Scope-of-Work have been removed and disposed of in accordance with all applicable federal, regional, state, and local regulations for asbestos abatement.

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1.2.4 Applicable Reference Documents

The most recent issue of each document is applicable. In case of overlapping jurisdiction of documents or regulations, the most stringent requirements are applicable. Applicable Regulations

CODE OF FEDERAL REGULATIONS (CFR)	
29 CFR 1910	Occupational Safety and Health Standards for General Industry
29 CFR 1926	OSHA Construction Standards
29 CFR 1926.1101	Construction Standard for Asbestos, Tremolite, Anthophyllite & Actinolite
U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) 40 CFR 61 Subpart A & B General Provisions	
40 CFR 61 Subpart M	National Emission Standards for Hazardous Air Pollutants (NESHAP)
40 CFR 241	Guidelines for the Land Disposal of Solid Wastes
40 CFR 257	Criteria for Classification of Solid Waste Disposal Facilities & Practices
40 CFR 260	Hazardous Waste Management Systems: General
40 CFR 261	Identification & Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners of Hazardous Waste Treatment, Storage & Disposal Facilities
40 CFR 265	Interim Status Standards for Owners of Hazardous Waste Treatment, Storage & Disposal Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 763	Asbestos-Containing Materials in Schools Rule (AHERA)
40 CRF 763 Subpart G	Worker Protection Rule
U.S. DEPARTMENT OF TRANSPORTATION (DOT)	
49 CFR 171 & 172	Transportation of Hazardous Waste
AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) PUBLICATIONS	
Z9.2-79	Fundamentals Governing the Design and Operation of Local Exhaust Systems
Z88.2-80	Practices for Respiratory Protection
UNDERWRITERS LABORATORIES, INC. (UL) PUBLICATIONS	
586-77 (R 1982)	Standard for Test Performance of High-Efficiency Particulate Air Filter Units

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) PUBLICATIONS

D 4240	Guide for Evaluation of Encapsulants for Friable Asbestos and Building Materials
D 1331-56(R80)	Surface and Interfacial Tension of Solutions of Surface Active Agents

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) PUBLICATIONS

EPA 560/5-85-024	Guidance for Controlling Asbestos-containing Materials in Buildings

CALIFORNIA CODE OF REGULATIONS (CCR) PUBLICATIONS

Title 8 CCR	California Code of Regulations Title 22 Div 4 Chapter 30 Hazardous Waste Handling

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1.2.5 Warning Signs and Labels

Each disposal bag or waste container must be labeled with "Asbestos NA2212," the generator's name and location, and a class 9 label. Disposal bags shall be marked as follows:

DANGER

CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

RQ-ASBESTOS
9-NA2212-PGIII

The transport container must have a Class 9 label with the asbestos ID number 2212 in an orange rectangular or white square on point display on all four sides of the container.

Warning signs shall be posted at all entrances to the Work Area and shall be labeled as follows:

DANGER

ASBESTOS
MAY CAUSE CANCER
CAUSES DAMAGES TO LUNGS
AUTHORIZED PERSONNEL ONLY

Barrier tape (caution tape) shall be placed at all hallways and corridors that lead to the Work Area and will display the following:

DANGER DO NOT ENTER

OR

RESTRICTED AREA: AUTHORIZED PERSONNEL ONLY

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1.3 EQUIPMENT REMOVAL, SITE SECURITY, AND SITE CONDITIONS

1.3.1 Equipment Removal Procedures

Clean external surfaces of contaminated containers and equipment thoroughly by wet-cleaning with sponges, or use HEPA-filtered vacuum before moving such items into equipment decontamination unit washroom for final cleaning and removal to uncontaminated areas. Ensure that Workers do not leave Work Areas through equipment decontamination unit.

1.3.2 Site Security

A. Contractor shall provide site security during the hours when Supervisor and workers are on site at no additional cost to Owner. During the hours when Contractor is not on site, Owner will specify the time period during which security shall be required. Contractor may, at Contractor's option, employ a security service, or use Workers of Contractor. Owner may, at Owner's option, provide "off-time" site security.

B. The entrance to the containment must be locked at all times that an employee of Contractor is not present at the entrance. If any windows and/or door are removed as a part of the work assigned to the Contractor, it is the Contractor's responsibility and at the Contractor's expense to secure these areas with plywood (or other acceptable material) door/window covers with locking devices as may be necessary.

C. When decontamination units are located on the exterior of buildings, Contractor must cover the exterior portion of decontamination unit with 2" plywood, or other suitable material to be approved by EnviroNova and Owner.

D. Contractor is responsible for all damages that result from the operation of Contractor's equipment or Workers within the building, except when specified by EnviroNova or his agent. Damages include, but are not limited to cleanup of any areas contaminated by Contractor during his work and all liquidated damages as stated and agreed to by Owner and Contractor as a result of Contractor's activities.

1.3.3 Site Conditions

A. Facilities: Domestic power and access to water will not be made available for Contractor's use for the duration of each specific abatement project. It is the Contractor's responsibility to supply power, water and Worker sanitation facilities for accomplishing the specified work. The Contractor is also responsible for supplying electricity for the monitoring and air clearance equipment utilized by EnviroNova throughout the duration of the project.

B. Extent of initial cleaning: When EnviroNova has determined that friable or damaged asbestos-containing materials have contaminated or potentially contaminated equipment and surfaces in the Work Area, all exposed surfaces in Work Area that will be protected by fire-retardant polyethylene sheeting shall be thoroughly cleaned with HEPA-filtered vacuums and wet-cleaned prior to installation of fire-retardant polyethylene sheeting over these surfaces.

C. Equipment storage: Arrangement for equipment storage will be made during pre-construction meeting.

D. Dumpster location: Arrangements for location of dumpsters to be made at pre-construction meeting. All dumpsters used on asbestos abatement projects for Owner must be secured with locks. Dumpsters must remain locked at all times while present on Owner's property, except when opened to receive waste. All debris boxes/dumpsters used on this project shall be hard sided including a hard lid, locked at all times when not in use and placed in an Owner designated location.

E. Contractor parking: Arrangements for Contractor employee parking to be made at the pre-construction meeting.

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1.4 PERSONAL PROTECTION

1.4.1 Personal Protection

A. Prior to commencement of work, the Workers must be instructed, knowledgeable, and accredited by an EPA-approved training facility on the hazards of asbestos exposure, on the use and fitting of respirators, on protective clothing, and on all aspects of work practices and protective measures. This training must comply with all regulations applicable to Worker training in the State of California, or State where the work will take place. All Workers must have evidence of current accreditation in their possession, or I.D. cards issued by an EPA-approved training agency. Workers having expired accreditation certificates will not be allowed in the Work Area.

B. In accordance with 29 CFR 1926.150, Contractor shall supply fire extinguishers for use inside and outside the Work Area. Contractor shall ensure that all Workers have been instructed in the general principles of fire extinguisher use and the hazards involved with incipient stage firefighting.

C. Respiratory Protection

1. All Contractor's Workers shall be freshly shaved on a daily basis prior to the commencement of each work shift. The Hazmat Project Manager can direct the shift Supervisor to have any and all Workers removed from the work site if the Hazmat Project Manager determines that a Worker's facial hair may impede an adequate respirator seal.

2. Provide Workers with personally issued and marked respiratory equipment approved by NIOSH and suitable for asbestos exposure level in Work Area.

3. Half-mask, dual cartridge, air purifying respirators must be worn by all Workers during the preparation of Work Areas having friable ACM/ACCM. Respiratory protection will not be required for preparation of Work Areas having only non-friable ACM/ACCM (only if a negative exposure assessment for that activity has been determined). Workers may use respiratory protection when not required, if they so desire.

4. A sufficient supply of respirator filters shall be maintained at the work site to provide new filters to Workers, Owner, authorized visitors, and government regulatory personnel throughout the duration of the Project. Filters shall be replaced according to the manufacturer's recommendations, when breathing becomes difficult, or if the filter becomes wet. At any time during on-site work activity, the Contractor shall maintain on-site and readily accessible three (3) new respirators, one in each size, small, medium and large along with the requisite filters/cartridges for the type of work being performed. These respirators will be kept in readiness for the Owner/Owner's representative or any governmental agency representative having jurisdiction over the project. Additionally, the Contractor shall make available to HPM two (2) sets of new North 7700 Series Respirator Filter Cartridges throughout the duration of the project. These filter cartridges shall be appropriate to the work being conducted on site i.e., P100 HEPA Cartridge and/or stacked P100 HEPA + Organic Vapor Cartridge, etc.

5. If Contractor's Workers intend to use a respirator less efficient than a Powered Air Purifying Respirator (PAPR) for removal of friable ACM/ACCM, Contractor must make available air testing results that show that fiber levels for similar work performed in the past were less than 0.1 fibers/cc. When fiber counts in excess of 0.1 fibers/cc are anticipated, PAPR or Type C pressure demand respiratory equipment will be the minimum required respiratory equipment.

6. When respirators with disposable filters are employed, Contractor must provide sufficient replacement filters as required by the Worker or applicable regulations.

7. Contractor shall begin removal of friable surfacing or thermal insulation ACM/ACCM with all Workers in Work Area using PAPR or Type C supplied air respirators unless documentation is submitted to HazMat Project Manager that shows permissible levels of airborne fibers (1.0 fibers/cc or less) on similar jobs in the past. EnviroNova must approve all documentation in writing, before use of PAPR or Type C respirators can be waived.

8. Unless the Contractor can supply the HPM with acceptable historical personal air monitoring data collected within the last six (6) months for similar ACM (similar asbestos material, mineral composition and concentration), the material being removed utilizing similar techniques, by the same Workers; all work under this project, shall commence with all Workers utilizing, at a minimum, Powered Air Purifying Respirators (PAPR's). Once the site conditions, work practices and engineering controls being utilized have demonstrated to the satisfaction if the HazMat Project Manager that the average ambient fiber concentration inside the Work Area, collected over a minimum of two (2) consecutive work shifts, is less than 0.05 fibers per cubic centimeter of air, EnviroNova may permit the Contractor's Workers to downgrade to Half-face Negative Pressure Respirators.

9. In the event that subsequent air monitoring shows an increase in the ambient fiber concentration level at or above 0.05 fibers per cubic centimeter of air, the Hazmat Project Manager will require the use of PAPR's until the conditions listed above have been met.

10. The minimum respiratory protection throughout the project shall be Half-face Negative Pressure Respirators with a protection factor often (10) times the Permissible Exposure Limit.

D. Protective Clothing

1. All Workers of Contractor, and authorized visitors are required to wear protective clothing while inside Work Areas. The protective clothing must be worn properly. No modifications to the clothing may be made that exposes the wearer's skin, other than the hands and face. Protective clothing is to include steel toe safety shoes or rubber boots as applicable, hard hats, eye protection, hearing protection and appropriate gloves.

2. Contractor must provide Workers and authorized visitors with sufficient sets of protective full body clothing. Such clothing will consist of protective full body coveralls and headgear. Contractor must provide eye protection and hard hats to all Workers and authorized visitors, when required by applicable safety regulations.

3. Non-disposable protective clothing and footwear must be left in equipment room until the completion of the asbestos abatement work. At this time, such items must be disposed of as ACM/ACCM, or must be thoroughly cleaned of all ACM/ACCM. Disposable protective clothing, headgear, and footwear may be provided.

4. The use of canvas or leather footwear is strictly prohibited in contaminated areas or Work Areas. All authorized Workers must wear rubber boots, or other approved footwear that is easily decontaminated. Footwear must be approved by EnviroNova.

E. Provide and post, in equipment room and clean room, the decontamination procedures, work procedures, and personal protection procedures to be followed by Workers, as described in these specifications.

F. Provide and post, in clean room, a map and clearly marked route of the location of the nearest hospital, telephone, applicable emergency phone numbers, and any other emergency information and procedures for this work.

G. Worker Protection Procedures

1. Each Worker and authorized visitor must, upon entering the job site: remove street clothing in clean room and put on a respirator with functional filters and clean protective clothing before entering equipment room or Work Area. Workers intending to re-wear contaminated protective clothing stored in equipment room must enter equipment room wearing only respirators (Workers will be permitted to wear tight-fitting, nylon swimsuits beneath their protective clothing).

2. Each Worker and authorized visitor must, each time they leave Work Area:

   a. Remove gross contamination from clothing with a HEPA-filtered vacuum before leaving Work Area.

   b. Proceed to equipment room, remove all clothing except respirators and optional swimsuit, and proceed directly to shower room.

   c. Wet the outside of the respirator with water while showering.

   d. Remove the respirator and thoroughly shampoo and wash them.

   e. If Worker intends to change filters, remove filters, wet them, and dispose of them in the container provided for this purpose.

   f. Wash and rinse the inside of the respirator.

3. After showering, each Worker and authorized visitor must:
   a. Proceed directly to clean room, dry off, and dress in uncontaminated street clothes at the end of each day's work, or before eating, smoking, or drinking.

   b. Before re-entering Work Area from clean room, each Worker and authorized visitor must put on a respirator equipped with functional filters and must dress in clean protective clothing.

4. Workers intending to re-wear contaminated protective clothing stored in equipment room must enter equipment room wearing only respirators and optional swimwear.

5. Workers removing waste containers from equipment decontamination unit must enter holding area from outside wearing a respirator and dressed in clean protective clothing. No Worker shall use this unit as a means to leave or enter washroom or Work Area.

6. Workers must not eat, drink, smoke, chew gum or tobacco, or apply cosmetics at the worksite except outside the controlled area. Smoking will not be permitted in the buildings or on the property at any time.

H. Type C Air Supplied System:

1. When a Type C Supplied Air System is to be used, the following specifications apply:

   a. Grade D Air: Compressed air must be at least Grade D quality. Certification of Grade D air quality must be supplied by an independent testing lab after the system has been installed on site.

   b. Compression: When supplied air is required, compressors shall be used throughout removal project to generate the air supply. The following specifications apply to compressor procedures:

      1. Compressor Shut Down: Interconnect monitors, alarms and compressor so that compressor is automatically shut down and the alarms sounded if any of the following occur:

      2. Carbon Monoxide (CO) concentrations exceed 5 ppm/v in the air line between the filter bank and backup air supply,

      3. Compressor temperature exceeds normal operating range.

      4. Compressor Location: Locate compressor in a location that will not impede access to the building and that will not cause a nuisance by virtue of noise, exhaust gases, or fumes to neighboring buildings.

      5. Air Intake: Locate air intake remotely from any source of automobile exhaust or any exhaust from motors or buildings.

   c. Purification: Supplied air must be purified using the following system of equipment:

      1. After cooler;

      2. A coalescing filter;

      3. Two adsorption filters consisting of:

      4. A molecular sieve to remove water vapor;

      5. An activated charcoal filter

      6. A mechanical filter capable of removing particles greater than 10 microns in diameter; and

      7. A carbon monoxide monitor equipped with a visual and audible alarm.

   d. Storage: Provisions must be made to store a volume of air sufficient for safe exit from Work Area in the event of compressor failure. Stored air may not be necessary when respirators are equipped with a HEPA egress filter. HEPA egress filters may be used for emergency egress only in asbestos abatement containments.

   e. Delivery: The air supply system must deliver air at a pressure sufficient to meet the respirator manufacturer's flow requirements. Any air-line respirators chosen must be of the Positive Pressure, Pressure Demand type, and approved by NIOSH. No unapproved respirators may be used at any time. The maximum air-line length must not exceed 300 feet, and maximum inlet pressure at the mask must not exceed 125 psi.

I. Protection from Heat Stress:

In Work Areas where heat stress to Workers is inevitable, such as roofs and hot mechanical rooms Contractor must provide adequate work breaks in cool areas outside Work Area, and/or body vests with ice pack inserts, depending on the site conditions.

SUB-SECTION 2.0 LABOR, MATERIALS, AND EQUIPMENT

2.1 MATERIALS

A. Contractor must furnish all labor, materials, equipment, and sub-contractors necessary for removal and disposal of ACM in a manner consistent with these specifications. These materials include but are not limited to:

1. Plastic (Polyethylene) Sheeting: Provide 6-mil thickness or greater polyethylene sheeting as specified in sizes to minimize the frequency of joints. Fire retardant polyethylene sheeting is required.
2. Tape: Provide two inch (2") or wider duct tape capable of sealing joints of adjacent sheets of polyethylene and for attachment of polyethylene sheets to finished or unfinished surfaces of dissimilar materials. Duct tape shall be capable of adhering under both dry and wet conditions, including use of amended water.
3. Spray Cement: Provide aerosol based spray cement specifically formulated to stick tenaciously to sheet polyethylene.
4. Surfactant: Provide a 50 percent polyoxyethylene ether and 50 percent polyoxyethylene ester, or equivalent and mix with water to provide a concentration of one ounce surfactant to 5 gallons of water.
5. Impermeable Containers: Provide impermeable containers suitable to receive and retain any asbestos-containing or contaminated materials until disposal at Disposal Site labeled in accordance with OSHA Regulation 29 CFR 1910.1101, DOT 49 CFR 171-177, Title 8 CCR and BAAQMD. Containers must be both air and watertight and must be resistant to damage and rupture. Plastic bags shall be a minimum of 6-mil thick.
6. Warning Labels and Signs: Provide warning labels and signs as required by OSHA Regulation 29 CFR Part 1910.1101, Title 8 CCR Part 1529 and the local air pollution agency, as required.
7. Other Materials: Provide all other materials, such as lumber, nails and hardware, which may be required to construct and dismantle the decontamination area and the barriers that isolate the Work Area.
8. Solvents used for the removal of resilient flooring mastics/adhesives shall be low-odor. Regardless of the solvent utilized, the Contractor may have the waste profiled for RCRA composition by the HPM. All costs involved with this testing shall be borne directly by the Contractor and not by the Owner.

B. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name.

C. Store all materials subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient to prevent damage or contamination.

D. Damaged or deteriorated materials shall not be used and must be removed from the premises. Material that becomes contaminated with asbestos must be disposed of in accordance with the applicable regulations.

2.2 TOOLS AND EQUIPMENT

A. Provide suitable tools for asbestos removal, including but not limited to scrapers, brushes, razor knives, wrenches, tools for constructing containment and decontamination units, brooms, carts, and safety equipment.

B. Provide suitable air moving and exhaust equipment, including but not limited to:

1. A method for maintaining pressure differential of 0.02 inches of water column inside containment than outside;
2. HEPA-filtered vacuums;
3. Recording Manometers for monitoring the pressure inside containment relative to outside; and
4. Portable lighting and power supplies as necessary.

C. No equipment shall cause suspension of ACM within Work Area or discharge of asbestos fibers outside of Work Area.

D. Electricity, Water and Sanitation Facilities.

ELECTRICITY, WATER AND SANITATION FACILITIES ARE THE CONTRACTORS' RESPONSIBILITY. The Owner will not provide electricity, water and sanitation (toilet) facilities. It is the Contractors' responsibility to furnish all power, water and sanitation requirement for the project. All costs associated with these facilities are to be built in to the Contractor's base cost.

Additionally, it is the Contractor's duty and responsibility to provide the HPM with all of their electricity requirements, in each Work Area, for the HPM to run their air sampling and other equipment. This supply of electricity is to be maintained uninterrupted for the entire duration of the project.

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SUB-SECTION 3.0 EXECUTION

This section applies to the preparation, removal, cleanup, and disposal of asbestos-containing materials that are friable, non-friable, and mastic materials. Refer to SUB-SECTION 4.0 for SPECIAL PROCEDURES to be used for removal of exterior roofing materials, exterior asbestos cement panels, glove bag removal, mini-containment, and decontamination of contaminated areas.

3.1 PREPARATION

This part is intended to be used as a general specification for preparation of Work Area for any particular asbestos abatement project for Owner. Consult the Scope-of-Work for each individual building for more specific preparation requirements.

3.1.1 General Procedures

Proper preparation of the Work Area prior to asbestos abatement is crucial. While these buildings are vacant and will be demolished, CAL/OSHA and BAAQMD regulations require that containment is built for Class 1 and Class 2 procedures. Therefore, the general aspects of preparation of the Work Area, as required by Owner for this project are discussed below:

A. Critical Barriers: All asbestos abatement work involving friable ACM/ACCM and non-friable ACM/ACCM shall require the installation of critical barriers at all penetrations to the Work Area. Any and all HVAC vents (supply or return) that are inside the Work Area shall be sealed with a minimum of two layers of 6-mil polyethylene and tape. Removable components of the HVAC system shall be removed, HEPA-Vacuumed and wet-wiped prior to being tagged and placed in 6-mil plastic bags and removed from the Work Area. Removed components shall be stored securely.

B. HVAC and Electrical Shut Down: HVAC systems serving the Work Area must be either shut down or temporarily capped on all asbestos abatement projects. Electrical systems serving the Work Area shall be shut down and secured, or special provisions with Owner must be made to ensure the safety of abatement Workers while asbestos abatement is performed. All electrical equipment used by Contractor in the Work Area must be protected by GFI circuits. The electrical supply to the Work Area must be located outside the containment. All electrical and HVAC system alterations or shut-downs shall be performed in conjunction with and at the direction of the Owner, occupant and facility manager.

C. Pre-Cleaning: When EnviroNova has determined that friable or damaged asbestos-containing materials have contaminated or potentially contaminated equipment and surfaces in the Work Area, Contractor must HEPA vacuum and wet-wipe these items before application of protective covering.

D. Polyethylene Sheeting: In general, all fixed objects and all *(architectural)* surfaces within *(in)* the Work Area must be protected from contamination during asbestos removal or from damage from application of encapsulants after asbestos removal. In certain instances, EnviroNova and Owner may not require a covering for walls, floors, or ceilings if the wall, floor, or ceiling material is smooth, non-porous, easily cleaned, and will not be aesthetically affected or damaged by application of amended water and encapsulants.

3.1.2 Preparation for Asbestos Containing Materials / Asbestos Containing Construction Material (ACM/ACCM); Procedures

A. Preparation

1. Post warning signs and barrier tape in and around Work Area as required by all applicable regulatory agencies, and restrict access to Work Area to Workers approved by Contractor or EnviroNova.
2. Shut down electric power when necessary. Provide temporary power and lighting and ensure safe installation of temporary power sources and equipment per applicable electric code requirements. Use ground-fault interrupter circuits (GFIC) at all temporary power sources in Work Area. Locate power source for temporary power panels and electrical equipment outside Work Area. All modifications to the electrical power systems must be performed by a licensed electrician. Additional precautions shall be taken when enclosing live electrical panels or circuit breaker boxes. A rigid enclosure shall be built around the panels and covered with 6-mil plastic with a minimum of 12 inches of clearance or as indicated on the panel. This enclosure shall be kept under positive pressure using a HEPA-filter equipped device (i.e., vacuum, differential pressure machine, etc.) to keep the panel adequately ventilated. All electrical panels or breaker boxes inside the Work Area shall be accessible to the Workers within the area and access to them shall not be blocked or restricted. The location and usage of these panels shall form a part of the Contractors' emergency plan and shall also be discussed as a part of the periodic site safety meeting. All electrical equipment used within the containment shall be routed through ground-fault interrupter circuits (GFIC).
3. Shut down and isolate heating, cooling and ventilating air systems to prevent contamination and fiber dispersal to other areas of the structure. During the work, vents within Work Area must be sealed with, at least, tape and fire-retardant polyethylene sheeting, unless otherwise indicated in the Scope-of-Work.
4. Clean supply and return air grilles, remove filters and dispose of filters as ACM.
5. Clean fixed objects within the proposed Work Area using HEPA-filtered vacuums and/or wet-cleaning methods as appropriate, and enclose objects with 6- mil fire-retardant polyethylene sheeting sealed with tape.
6. Clean proposed Work Areas using HEPA-filtered vacuums or wet-cleaning methods as appropriate. Methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters must not be used.
7. Seal off all openings, including but not limited to: corridors, doorways, elevators, skylights, ducts, grills, diffusers, and any other penetrations of Work Areas. Doorways and corridors that will not be used for passage during work must be sealed with critical barriers. These seals must be left in place until final air testing is complete and the results received and approved. The Work Area may require isolation from occupied areas of the building as determined by the Owner and/or EnviroNova. This isolation may include the construction of rigid or "hard barriers".
8. Hard barriers shall be constructed of wood or metal framing to support barriers in all openings larger than 4 feet by 8 feet (4'x8'). Plywood or drywall sheets shall be affixed to the work side of the barrier. The Work Area side of the hard barrier shall be covered with a double layer of 6-mil plastic sheeting sealed in place. The other side of the hard barrier shall be covered with a single layer of 6-mil plastic sheeting sealed at the ceiling, walls and floor level. The entire barrier shall be airtight and may be require a "smoke test" to confirm its integrity. Allowances must be made for emergency exits.
9. Cover surfaces in the proposed Work Area, which do not require asbestos removal, with fire-retardant polyethylene sheeting in the following manner:

10. Cover, isolate, or remove and clean ceiling-mounted objects, such as lights and other items not previously sealed off, or covered, that interfere with asbestos abatement. Use localized water spraying or HEPA-filtered vacuums during fixture removal to reduce fiber dispersal.
11. Maintain marked emergency and fire exits from Work Areas, or establish alternative exits satisfactory to the fire code.
12. Adequate illumination for the entire Work Area shall be provided for the entire duration of the project, during the working hours of the project shall be maintained until final clearance results are obtained.
13. The Contractor shall secure all windows and access points to the Work Area to prevent against break-ins and vandalism.

B. Decontamination Units

1. Use pre-constructed decontamination units or build suitable framing and line with double layer of fire-retardant polyethylene sheeting sealed with tape at all lap joints in the fire-retardant polyethylene sheeting for all containments and decontamination unit rooms.

2. Construct a Worker decontamination unit contiguous to Work Area consisting of three totally enclosed rooms as follows:

   a. An equipment room with two curtained doorways, one to Work Area and one to shower room.

   b. A shower room with two curtained doorways, one to equipment room and one to clean room. Shower room must contain at least one shower with hot and cold water for each 10 persons in the Work Area. Water must be mixed at point of use (29 CFR 1910.141).

      1) Careful attention must be paid to shower room to ensure against leaking of any kind and to insure proper drainage of shower water. There must be no standing water in the shower stall or shower room. Ensure a supply of soap, shampoo and clean disposable towels at all times in shower room.

      2) Waste water must be filtered through a medium that is capable of removing suspended particles of a diameter greater than or equal to 3 microns. Filtered waste water must be discharged into public sanitary sewer systems. Discharge of filtered water onto surface soil, asphalt, concrete, or any other porous surface shall not be permitted.

      3) Permits from local state and federal government agencies, the local water pollution control district, public sanitary sewer entity, etc. will be required on site prior to any filtered waste water being discharged from the Work Area or the decontamination unit's shower system. Under no circumstances shall waste water (filtered or otherwise) be discharged into a storm water drain or runoff.

      4) Filtration devices' filter element or accumulation tank contents shall be removed, manifested and disposed of as friable Asbestos Containing Material at the Contractors' expense.

   c. A clean room with one curtained doorway into shower room and one entrance or exit to non-contaminated areas of the building. Clean room must have sufficient space for storage of the Worker's street clothes, towels, and other non-contaminated items.

3. When required or directed to by the Owner and/or EnviroNova, provide or construct an equipment decontamination unit consisting of two totally enclosed rooms as follows:

   a. A washroom, consisting of an airlock, with a curtained doorway to a designated area of Work Area and a curtained doorway to holding area.

   b. A holding area, consisting of an airlock, with a curtained doorway to an uncontaminated area.

   c. When the uncontaminated area is an elevator, a lockable plywood door must also be constructed and placed in front of the elevator door to restrict access to the contaminated areas.

   d. Worker decontamination unit may be used as an equipment decontamination unit when deemed appropriate by EnviroNova.

C. Separation of Work Areas from Occupied Areas

1. Maintenance of Containment:
   a. Ensure that barriers and fire-retardant polyethyle and the sheeting are effectively sealed and taped. Repair damaged barriers and sheeting, and remedy defects immediately upon discovery. Maintenance is to continue until clearance to dismantle containment is given by EnviroNova.

   b. Supervisor shall frequently inspect containment during each work shift. Any breaks, breaches, delamination of plastic sheeting, etc., shall be repaired instantly.

   c. Monitor effectiveness of barriers with recording Manometer. A pressure differential must be maintained at all times, prior to the first disturbance of ACM/ACCM and ending only when final air testing results show that fiber concentrations are acceptable by whichever method has been specified in the Scope-of-Work for final air clearance. In the event that pressure differential falls below minus 0.020-inches water column all removal activity in the Work Area shall cease and the Contractor shall devote all resources to tracing and rectifying the fall in pressure prior. Removal shall be suspended until minus 0.020-inches water pressure is restored and permission has been obtained from EnviroNova to recommence the removal. While pressure is being restored the Contractor shall direct that accumulated waste in the Work Area be bagged and the Work Area be cleaned.

2. Asbestos abatement work shall not be permitted until:
   a. Documentation for all on-site supervisors and Workers has been submitted to, reviewed and accepted by EnviroNova. Supervisor and Worker documents include current training certification(s), current medical surveillance certification and current respirator fit-testing certification. One copy of each of the aforementioned documents is to be submitted to EnviroNova or their representative along with a copy of the notification to Cal/OSHA and the local air pollution control district, if required. A second copy is to be maintained on-site by the Supervisor. It is the Supervisors' responsibility to maintain current on-site documentation for all personnel substitutions or alterations.

   b. **All HEPA-filter equipped differential pressure units and vacuum cleaners have been challenge tested and passed on site and are certified for use.** Di (2-ethylhexyl) phthalate (DOP, DEHP) POLY-ALPHA OLEFIN (PAO) or an equivalent challenge agent must be used to certify all HEPA filter equipped units.

c. Arrangements have been made for the transportation and disposal of waste at the selected and approved landfill, as identified in Contractor submittals.

d. Arrangements have been made to contain, filter or properly dispose of contaminated waste water. Permits from local state and federal government agencies, the local water pollution control district, public sanitary sewer entity, etc. will be required on site prior to any filtered waste water being discharged from the Work Area or the decontamination unit's shower system. Under no circumstances shall water (filtered or otherwise) be discharged into a storm water drain or runoff.

e. Waste water must be filtered through a medium that is capable of removing suspended particles of a diameter greater than or equal to 3 microns. Filtered waste water must be discharged into public sanitary sewer systems. Discharge of filtered water onto surface soil, asphalt, concrete, or any other porous surface shall not be permitted.

f. Decontamination units are in place and the Work Area is effectively isolated from the remainder of the building.

g. All other preparatory steps have been taken and applicable notices posted and permits obtained.

h. Only when all of the above conditions have been met will Contractor be allowed to begin the disturbance of any ACM/ACCM. An inspection of each containment by EnviroNova will be performed prior to the start of removal. Removal shall not be performed until the condition of each containment is approved by EnviroNova.

3.2. ASBESTOS REMOVAL

This section is intended to be used as a general specification for asbestos removal in Work Area for any particular asbestos abatement project for Owner. Consult the Scope-of-Work for each individual building for more specific asbestos removal requirements.

Removal of vinyl floor tile (or equivalent) and/or its associated adhesive/mastic shall be removed by manual means without the use of any electro-mechanical device unless the Contractor can prove that it is operationally infeasible to remove the material(s) manually. Infeasible, in this instance, shall not include fiscal or schedule considerations.

For the purposes of these specifications and for this project, the use of mechanical means for the removal of any materials, mastics or adhesives shall render the removal to be construed as that of a friable material. All containment, personal protection, removal and disposal means, methods, local, state and federal regulations for friable materials removal shall be observed and adhered to. If solvents are used for the removal of mastics, adhesives, etc., in addition to the procedures enumerated herein, all of the solvent manufacturer's procedures are also to be followed pertaining to transportation, storage, use, personal protective equipment requirements, disposal, etc. Solvents used shall be low-odor. All solvent waste material shall be placed in impervious barrels prior to being removed from the Work Area. In the event of a conflict between these specifications and those of the solvent manufacturer's, the more stringent shall apply. Depending on the chemical composition of the materials being removed, and the SDS of the solvent used, the ensuing amalgam of the solvent and the ACM/ACCM containing material may require disposal as a RCRA hazardous waste. Regardless of the solvent utilized, the Contractor may have the waste profiled for RCRA composition by the HPM. All costs involved with this testing shall be borne directly by the Contractor and not by the Owner.

3.2.1 Asbestos Removal, Friable Materials

A. Prepare site as per section 3.1.1 and 3.1.2. In areas where ACM/ACCM is greater than 2" thick, wetting would begin the day before removal is to take place.

B. The use of mechanical means for the removal of any material (including but not limited to putty, caulks, mastics, adhesives, etc.) shall render the removal to be construed as that of a friable material under this contract. All containment, personal protection, removal and disposal means, methods, local, state and federal regulations for friable materials removal shall be observed and adhered to.

C. Spray asbestos material with amended water using spray equipment capable of providing a mist application to reduce the release of fibers. Saturate friable material sufficiently to wet the substrate without causing excessive wetting, dripping, or delamination of the material.

D. Spray the asbestos material repeatedly during removal process to maintain wet condition and minimize asbestos fiber dispersion. The spraying must not be used as a technique to remove or dislodge ACM/ACCM.

E. Remove saturated asbestos material in small sections. As it is removed, the saturated asbestos material shall be packed in plastic bags of 6-mil minimum thickness and placed in appropriately labeled (29 CFR 1926.1101(k)(8)(iii)) container for transport. Fixtures designated for total demolition may be wrapped in double layers of 6-mil plastic, appropriately labeled and placed in labeled containers for transport. The Contractor shall adhere to disposal authorities' size and weight requirements for containers (bags or packages).

F. If solvents are used for the removal of mastics, adhesives, etc., in addition to the procedures enumerated herein, all of the solvent manufacturer's procedures are also to be followed pertaining to transportation, storage, use, personal protective equipment requirements, disposal, etc. Solvents used shall be low-odor. All solvent waste material shall be placed in impervious barrels prior to being removed from the Work Area. In the event of a conflict between these specifications and those of the solvent manufacturer's, the more stringent shall apply. Depending on the chemical composition of the materials being removed, and the SDS of the solvent used, the ensuing amalgam of the solvent and the ACM/ACCM containing material may require disposal as a RCRA hazardous waste. Regardless of the solvent utilized, the Contractor may have the waste profiled for RCRA composition by the HPM. All costs involved with this testing shall be borne directly by the Contractor and not by the Owner.

Waste Load-Out Procedure

1. Seal bags or containers. Clean external surfaces of containers thoroughly by wet cleaning in the designated area of Work Area that is part of equipment decontamination unit.

2. Move containers to washroom, wet-clean each container thoroughly, and move to clean room area pending removal to uncontaminated areas. The material must be placed in a clean bag or container as it exits the equipment washroom and enters clean room area.

3. Ensure that containers are removed from clean room areas by Workers who have entered from uncontaminated areas, dressed in clean coveralls. Ensure that Workers do not enter from uncontaminated areas into washroom or Work Area. Ensure that contaminated Workers do not exit Work Area through equipment decontamination unit.

4. When disposal bags are used, the bagged material must be placed within a second bag in the equipment decontamination unit. The second, outer bag must be labeled with all applicable warnings, including DOT labeling. Double bagged material shall then be passed through clean

room to a covered cart for removal from the building. When larger pieces of material are to be disposed of, the material must be wrapped in two (2) layers of fire-retardant polyethylene sheeting and properly labeled in the equipment decontamination unit.

5. All bags, containers and drums must be tagged with the manifest number and the numbering system provided by Owner, if any.

Secondary Removal

1. After completion of gross removal work, all surfaces from which asbestos has been removed must be wet-brushed with a nylon or plastic brush and/or wet-cleaned by an equivalent method to remove all visible material. During this work the surfaces being cleaned must be kept wet.
2. EnviroNova will individually approve each area of encapsulation prior to commencement of encapsulation.
3. Encapsulant is to be applied only to surfaces from which ACM/ACCM has been removed and EnviroNova has approved. Encapsulation is not to be construed as a method for sealing dust on surfaces.

3.2.2 Asbestos Removal, Non-Friable Materials

A. Prepare site as per section 3.1.1 and 3.1.2.

B. Wet non-friable material with amended water and remove with appropriate equipment. Dispose of material according to waste load-out procedure.

C. Spray the asbestos material repeatedly during removal process to maintain wet condition and minimize asbestos fiber dispersion. The spraying must not be used as a technique to remove or dislodge ACM/ACCM.

D. Remove saturated asbestos material in small sections. As it is removed, the saturated asbestos material shall be packed in plastic bags of 6-mil minimum thickness and placed in appropriately labeled (29 CFR 1926.1101(k)(8)(iii)) container(s) for transport. Fixtures designated for total demolition may be wrapped in double layers of 6-mil plastic, appropriately labeled and placed in labeled containers for transport. The Contractor shall adhere to disposal authorities' size and weight requirements for containers (bags or packages).

E. If solvents are used for the removal of mastics, adhesives, etc., in addition to the procedures enumerated herein, all of the solvent manufacturer's procedures are also to be followed pertaining to transportation, storage, use, personal protective equipment requirements, disposal, etc. Solvents used shall be low-odor. All solvent waste material shall be placed in impervious barrels prior to being removed from the Work Area. In the event of a conflict between these specifications and those of the solvent manufacturer's, the more stringent shall apply. Depending on the chemical composition of the materials being removed, and the SDS of the solvent used, the ensuing amalgam of the solvent and the ACM/ACCM containing material may require disposal as a RCRA hazardous waste. Regardless of the solvent utilized, the Contractor may have the waste profiled for RCRA composition by the HPM. All costs involved with this testing shall be borne directly by the Contractor and not by the Owner.

Waste Load-out Procedure

1. Seal bags or containers. Clean external surfaces of containers thoroughly by wet cleaning in the designated area of Work Area that is part of equipment decontamination unit.
2. Move containers to washroom, wet-clean each container thoroughly, and move to clean room area pending removal to uncontaminated areas. The material must be placed in a clean bag or container as it exits the equipment washroom and enters clean room area.
3. Ensure that containers are removed from clean room areas by Workers who have entered from uncontaminated areas, dressed in clean coveralls. Ensure that Workers do not enter from uncontaminated areas into washroom or Work Area. Ensure that contaminated Workers do not exit Work Area through equipment decontamination unit.
4. When disposal bags are used, the bagged material must be placed within a second bag in the equipment decontamination unit. The second, outer bag must be labeled with all applicable warnings, including DOT labeling. Double bagged material shall then be passed through clean room to a covered cart for removal from the building. When larger pieces of material are to be disposed of, the material must be wrapped in two (2) layers of fire-retardant polyethylene sheeting and properly labeled in the equipment decontamination unit.
5. All bags, containers and drums must be tagged with the manifest number and the numbering system provided by Owner, if any.

Secondary Removal

1. After completion of gross removal work, all surfaces from which asbestos has been removed must be wet-brushed with a nylon or plastic brush and/or wet-cleaned by an equivalent method to remove all visible material. During this work the surfaces being cleaned must be kept wet.
2. EnviroNova will individually approve each area of encapsulation prior to commencement of encapsulation.
3. Encapsulant is to be applied only to surfaces from which ACM/ACCM has been removed and EnviroNova has approved. Encapsulation is not to be construed as a method for sealing dust on surfaces.

3.3 CLEANUP

This part is intended to be used as a general specification for cleanup of Work Area for any particular asbestos abatement project for Owner. Consult the Scope-of-Work for each individual building for more specific cleanup requirements.

A. Remove visible accumulations of asbestos material and debris. Wet-clean all surfaces within Work Area.

B. Remove the upper layer of fire-retardant polyethylene sheeting from walls and floors only. The windows, doors, and HVAC vents must remain sealed and any HEPA-filtered exhaust units, air filtration, and decontamination unit must remain in place and in service.

C. Clean all surfaces in Work Area and any other contaminated areas with wet-cleaning methods using amended water, and/or using HEPA-filtered vacuums. After cleaning Work Area, allow for settlement of dust, and again wet-clean or clean with HEPA-filtered vacuums, all surfaces in Work Area. After completion of the second cleaning operation, perform a complete visual inspection of Work Area to ensure that Work Area is free of dust and/or visible asbestos debris.

D. Time for settlement of dust between initial cleaning and final cleaning will be determined by EnviroNova. Typical settling times for various types of ACM/ACCM are: 12-16 hours for friable materials, and 3-6 hours for non-friable materials.

E. Sealed containers and all equipment in use in Work Area must be included in the cleanup and must be removed from Work Area via equipment decontamination unit, at an appropriate time in the cleaning sequence.

3.4 INSPECTIONS AFTER REMOVAL

This part is intended to be used as a general specification for inspections of Work Area for any particular asbestos abatement project for Owner. Consult the Scope-of-Work for each individual project for more specific inspection requirements.

3.4.1 Inspections After Removal (see also SUB-SUB-SECTION 5.1)

A. If EnviroNova finds visible accumulations of asbestos debris in Work Area after the completion abatement, Contractor shall repeat wet-cleaning until Work Area compliant, at Contractor's expense.

B. When an inspection by EnviroNova in the presence of Contractor determines that the area is free of accumulations of dust and visible asbestos debris and the final air clearance has been met, decontamination unit shall be removed, the area thoroughly wet-cleaned, and materials from equipment room and shower room disposed of as contaminated waste.

C. A final inspection will be carried out by EnviroNova in the presence of Contractor to ensure that no dust or debris remains on surfaces as a result of dismantling operations.

3.5 DISPOSAL

This part is intended to be used as a general specification for disposal of asbestos-containing materials for any particular asbestos abatement project for Owner. Consult the Scope-of-Work for each individual building for more specific disposal requirements.

3.5.1 Disposal

A. Preparation and Security of Waste Holding Areas

1. Prepare enclosed transport vehicles and/or enclosed dumpsters/containers with at least 2 layers of 6-mil fire-retardant polyethylene sheeting. The floor and interior wall surfaces shall be covered with one layer of 6-mil. Plastic sheeting sealed with tape to a minimum height of 6 feet (6’) above the floor surface or to the roof line of the waste container.

2. Secure transport vehicles and dumpsters with padlocks. Dumpsters/containers and waste transport vehicles must be locked and appropriately labeled at all times while engaged in asbestos disposal on Owner's property, except when waste materials are being loaded into them.

B. Storage and Disposal of Containers

1. Containers of ACM/ACCM shall not be stored in uncontaminated areas, but must be moved directly from Work Area to a labeled, enclosed dumpster in enclosed carts.

2. ACM/ACCM must be disposed of at the selected and approved disposal site in accordance with requirements of all applicable disposal authorities. Solvents used for the removal of resilient flooring mastics/adhesives shall be low-odor. All adhesives/mastics shall be disposed of as a

RCRA waste. Regardless of the solvent utilized, the Contractor may have the waste profiled for RCRA composition by the HPM. All costs involved with this testing shall be borne directly by the Contractor and not by the Owner.

3. Disposal documents and receipts must be submitted to EnviroNova prior to final clearance of Contractor.

C. Contractor must tag each container with a waste manifest label and a numbering system provided by Owner, if any.

D. Discharge of Waste Water

1. Waste water must be filtered through a medium that is capable of removing suspended particles of a diameter greater than or equal to 3 microns. Filtered waste water must be discharged into public sanitary sewer systems. Discharge of filtered water onto surface soil, asphalt, concrete, or any other porous surface shall not be permitted.
2. Permits from local state and federal government agencies, the local water pollution control district, public sanitary sewer entity, etc. will be required on site prior to any filtered waste water being discharged from the Work Area or the decontamination unit's shower system. Under no circumstances shall waste water (filtered or otherwise) be discharged into a storm water drain or runoff.
3. Filtration devices' filter element or accumulation tank contents shall be removed, manifested and disposed of as friable Asbestos Containing Material at the Contractors' expense.

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SUB-SECTION 4.0 SPECIAL PROCEDURES

This section is intended to be used as a general specification for special procedures for any particular asbestos abatement project for The Owner. Contractor should consult the Scope-of-Work for each individual building for more specific requirements pertaining to this section.

4.1 EXTERIOR ASBESTOS REMOVAL

This part applies only to removal of non-friable exterior roofing materials, non-friable asphalt-based exterior mastic materials, or non-friable exterior asbestos cement panels. Where exterior components have a direct impact on the interior of the buildings or share a common surface with the interior of the building, or in the event of a conflict with interpretation, all procedures enumerated in Section 3 of these specifications shall apply.

4.1.1 Personal Protection

A. Exterior work may be performed using half-mask, dual cartridge, air purifying respirators. Organic vapor cartridges placed in tandem with HEPA filters shall be required when any solvents or materials that produce vapors are used as part of the removal process

B. All Workers engaged in exterior removal must wear disposable full body coveralls, disposable head covers, disposable footwear, hard hats, goggles and gloves as required by OSHA/Cal/OSHA for the complete protection of the Workers.

C. Shoes may be worn for exterior work, provided the shoes are stored in sealed bags at the decontamination area at the end of the day, and properly decontaminated after completion of the work.

4.1.2 Protection from Heat Stress

In exterior areas where heat stress to Workers is inevitable, Contractor must provide frequent work breaks in cool areas outside Work Area, and/or body vests with ice pack inserts, depending on the site conditions.

4.1.3 Decontamination Area

A. Locate decontamination areas in an exterior or interior area when access from the Work Area can be accomplished at ground level with exterior access.

B. Contractor shall establish a decontamination area that is adjacent to the Work Area for the decontamination of Workers and their equipment.

C. The area must be of sufficient size as to accommodate cleaning of equipment and removing personal protective equipment without spreading contamination beyond the area.

D. Protective clothing must be cleaned with a HEPA-vacuum before it is removed.

E. All equipment and surfaces of containers filled with ACM/ACCM must be cleaned prior to removing them from the equipment room or area.

F. Contractor shall ensure that Workers enter and exit the Work Area through the decontamination area.

4.1.4 Respirator Decontamination Facilities

A respirator decontamination facility consisting of a water hose equipped with a spray nozzle, an adequate supply of 6-mil bags, and an adequate supply of disposable towels may be used in a remote section of Work Area so Workers may replenish body fluids with Gatorade, or a similar electrolyte replenishing drink.

A. Each person who uses the respirator decontamination facility shall rinse the exterior of the respirator while holding head over an open 6-mil bag.

B. After thoroughly rinsing the respirator each person shall wipe the excess water off the exterior of the respirator with a disposable towel, and dispose of the towel in the bag.

C. After removing excess water from the exterior of the respirator, the respirator may be removed.

D. Waste water that has accumulated in the rinse bag shall be disposed of as ACM or properly filtered in the decontamination area.

4.1.5 Exterior Asbestos Removal

A. Provide suitable tools for removal of asbestos cement panels, roof felts, tar, and mastics. Roof cutters are permissible only when proper steps are taken to ensure dust-free removal conditions, and the building or facility Owner, EnviroNova and local regulatory agencies permit the use of such equipment.

B. For asbestos cement panels, the perimeter of the Work Area shall be clearly delineated and labeled with caution tape. Prior to the start of any work prepare the surrounding area by clearing and cleaning all debris and trash to a minimum of ten feet (10') from the exterior Work Area. The surrounding areas shall then be covered with one layer of 6-mil plastic sheeting. The plastic sheeting shall be sized so that it will cover a drop area with a minimum of 10 feet (10') from the Work Area. Spray panels with amended water using spray equipment capable of providing a mist application to reduce the release of fibers. Saturate the material sufficiently to wet the material without causing excess dripping.

C. Remove wet asbestos cement material in small sections. As it is removed wrap the material in 6-mil fire-retardant polyethylene sheeting and place in appropriately labeled (29 CFR 1926.1101(k)(8)(iii)) containers lined with 6-mil fire-retardant polyethylene sheeting and enclosed truck or closed dumpster for transport.

D. Asbestos cement panels must be removed carefully and in complete sections. Breakage of the panels must be minimized, and must not be used as a method of removal without prior written approval of EnviroNova.

E. For removing roofing material which contains ACM/ACCM Contractor shall ensure that the following work practices are followed:

1. The perimeter of the building shall be clearly delineated and labeled with caution tape. Prior to the start of any work on the roof, prepare the surrounding area below by clearing and cleaning all debris and trash to a minimum of 15 feet (15') from the exterior walls of the building. The surrounding areas shall then be covered with one layer of 6-mil plastic sheeting. The plastic sheeting shall be sized so that it will cover a drop area with a minimum of 15 feet (15') from the exterior wall. The interior of the building shall be appropriately and adequately protected from debris that may fall through the roof decking during removal.
2. Roofing material shall be removed in an intact state to the extent feasible.

3. Wet methods shall be used to remove roofing materials that are friable, or that will be rendered friable during removal, unless such wet methods are not feasible or will create safety hazards.
4. Cutting machines, if permitted for use, shall be continuously misted during use, unless a competent person determines that misting substantially decreases Worker safety.
5. When removing built-up roofs with asbestos-containing roofing felts and an aggregate surface using a power roof cutter, all dust resulting from the cutting operation shall be collected with a HEPA-filtered dust collector, or shall be HEPA vacuumed by vacuuming along the cut line.
6. When removing built-up roofs with asbestos-containing roofing felts and a smooth surface using a power roof cutter, if permitted for use, the dust resulting from the cutting operation shall be collected either by a HEPA dust collector or HEPA vacuuming along the cut line, then carefully and completely wipe up the still-wet dust and debris left along the cut line.

F. Asbestos-containing material that has been removed from a roof shall not be dropped or thrown to the ground.

1. Unless the material is carried or passed to the ground by hand, it shall be lowered to the ground via covered, dust-tight chute, crane or hoist.
2. Any ACM/ACCM that is not intact shall be lowered to the ground as soon as is practicable, but in any event no later than the end of the work shift. While the material remains on the roof it shall either be kept wet, placed in an impermeable waste bag, or wrapped in plastic sheeting.
3. Intact ACM/ACCM shall be lowered to the ground as soon as is practicable, but in any event no later than the end of the work shift.

G. Upon being lowered, unwrapped material shall be transferred to a closed receptacle in such manner so as to preclude the dispersion of dust.

H. Roof level heating and ventilation air intake sources shall be isolated after these ventilation systems have been shut down.

I. After completion of removal work, all surfaces from which asbestos has been removed must be wet-cleaned, and the entire surface must be vacuumed with a HEPA-filtered vacuum.

J. Any adhesive materials such as mastic, asphalt, or tar must be removed using a suitable (non-toxic) solvent. The residue must be bagged and properly disposed of as ACM. On porous or irregular surfaces where all traces of ACM/ACCM cannot be removed, encapsulant may be applied. Prior to encapsulation, however, these areas must be inspected and approved by EnviroNova.

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4.2 DECONTAMINATION OF CONTAMINATED AREAS

In the event that an area of a building is determined by EnviroNova or The Owner as being contaminated with asbestos dust or debris, the area must be decontaminated using the procedures included in this part of the specification.

4.2.1 Personal Protection

A. All Workers entering an area that is visibly contaminated with assumed, suspected, or known ACM/ACCM must wear half-mask, dual cartridge, air purifying respirators and protective clothing to install temporary barriers and begin preparation of the contaminated area.

B. When area or personal air samples indicate a level of airborne fibers to be in excess of 0.1 fibers/cc, all Workers in the contaminated area must use PAPR until fiber concentrations are consistently measured below 0.1 fibers/cc.

C. When area or personal air samples indicate a level of fiber concentrations to be in excess 1.0 fibers/cc, all Workers in the contaminated area must use a PAPR or Type C, pressure demand respirator until fiber concentrations are measured below 1.0 fibers/cc.

D. All Workers entering the contaminated area must wear protective clothing and use decontamination units upon leaving the contaminated area.

4.2.2 Preparation

A. Immediately shut down and isolate heating, cooling and ventilating air systems to prevent contamination and fiber dispersal to other areas of the structure. Adequately wet all visible asbestos debris in the contaminated area. Cover vents within the contaminated area with tape and fire-retardant polyethylene sheeting.

B. Seal off contaminated area with temporary barriers constructed with 6-mil fire-retardant polyethylene sheeting.

C. Construct curtained doorway for temporary access to contaminated area.

D. Construct a worker decontamination unit contiguous to the contaminated area consisting of three totally enclosed rooms as follows:

1. An equipment room with two curtained doorways, one to the contaminated area and one to shower room.

2. A shower room with two curtained doorways, one to equipment room and one to clean room. Shower room must contain at least one shower with hot and cold water. Water must be mixed at point of use (29 CFR 1910.141).

3. Careful attention must be paid to shower room to ensure against leaking of any kind and to ensure proper drainage of shower water. There must be no standing water in the shower stall or shower room. Insure a supply of soap at all times in shower room.

4. Waste water must be filtered through a medium that is capable of removing suspended particles of a diameter greater than or equal to 3 microns. Filtered waste water must be discharged into public sanitary sewer systems. Discharge of filtered water onto surface soil, asphalt, concrete, or any other porous surface shall not be permitted. Permits from local state and federal government agencies, the local water pollution control district, public sanitary sewer entity, etc. will be required on site prior to any filtered waste water being discharged from the Work Area or the decontamination unit's shower system. Under no circumstances shall waste water (filtered or otherwise) be discharged into a storm water drain or runoff.

5. A clean room with one curtained doorway into shower room and one entrance or exit to uncontaminated areas of the building. Clean room must have sufficient space for storage of the workers street clothes, towels, and other uncontaminated items.

E. Seal off all openings, including but not limited to: corridors, doorways, elevators, skylights, ducts, grills, diffusers, and any other penetrations to the contaminated areas. Doorways and corridors that will not be used for passage during work must be sealed with barriers. The seals on these barriers are critical to the integrity of containment and must be left in place until final air testing is complete and the results received and approved.

4.2.3 Decontamination of Contaminated Surfaces

A. Clean moveable objects and carpeting within the contaminated areas using HEPA-filtered vacuums and/or wet- cleaning methods as appropriate, and remove such objects from the contaminated area to a suitable temporary location. Refer to Sub-Section 5.0 Inspections, Section 5.4(B) for Re-Establishment of Object and Systems.

B. Clean fixed objects, including ceiling and wall fixtures, within the contaminated area using HEPA-filtered vacuums and/or wet-cleaning methods as appropriate.

C. Clean all exposed surfaces in the contaminated area using HEPA-filtered vacuums or wet-cleaning methods as appropriate. Methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA-filters shall not be used.

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SUB-SECTION 5.0 INSPECTIONS, PROJECT MANAGEMENT, AIR MONITORING AND COMPLETION

5.1 INSPECTIONS

This section is intended to be used as a general specification for inspections, air monitoring, and completion for any particular asbestos abatement project for the Owner. Consult the Scope-of-Work for each individual building, for more specific requirements pertaining to this section, if any.

5.1.1 Inspections Prior to and During Work

A. Contractor shall make all Work Areas available to inspection throughout the project.

B. Each Work Area will be inspected by EnviroNova accompanied by Contractor:

1. Immediately after initial cleaning has been completed and prior to the application of fire-retardant polyethylene sheeting to exposed surfaces.

2. Immediately prior to the commencement of removal of ACM/ACCM (after preparation of Work Area is complete).

3. Periodically throughout the project.

4. After removal is complete but prior to the application of any encapsulant to the exposed substrates, and pre-encapsulation air testing.

C. Regular inspections of the HEPA-filtered ventilation system will be performed by EnviroNova to ensure filters are excessively loaded with particulate debris, and are properly seated in HEPA-filtered exhaust units. If deemed necessary by EnviroNova, the Contractor will be required to change the filters.

5.1.2 Inspection of Non-Asbestos Containing Materials

EnviroNova may inspect all materials from Work Area that are being disposed of as Non-asbestos Containing Materials.

5.1.3 Final Visual Inspections

A. A final visual inspection will be made after all Contractors' materials have been removed from Work Area and all removal, encapsulation, disposal, and related work is completed.

B. Work Area must be well lighted for inspection by EnviroNova. Insufficient lighting may result in delay of the final visual inspection.

C. All fire-retardant polyethylene sheeting must be removed from Work Area, with the exception of critical barriers, and decontamination unit. HEPA-filtered exhaust units must remain operational, and pressure differential maintained until final clearance by TEM or PCM is obtained.

5.2 PROJECT MANAGEMENT

5.2.1 Project Management

A. The Owner will employ EnviroNova to conduct on-site Project Management for all phases of the asbestos abatement work.

B. EnviroNova will be responsible for:

1. Approval of all submittals by Contractor, including pay requests.

2. Conducting all inspections at the job site, as required. Monitoring job site performance and progress.

3. Performing all personal, area, and final air testing throughout the course of each project. Personal testing by EnviroNova will be for the Owner's use and records only. The Contractor is responsible for collecting all personal samples as may be required by these specifications, local, state and federal regulations, etc.

4. Submitting final report to the Owner that will include all documents, logs, charts, photographs, and test results pertaining to each project.

5.3 AIR MONITORING

5.3.1 General

A. The Asbestos Contractor is responsible for the personal air sampling. All other air sampling will be performed by EnviroNova. Personal, area, and pre-encapsulation air samples will be analyzed by an NVLAP accredited laboratory using NIOSH method 7400 using phase contrast microscopy (PCM) or by an individual possessing a valid NIOSH-582 equivalency qualification. If deemed appropriate be EnviroNova, PCM may be used for final air testing.

B. Final air samples will be analyzed by a laboratory accredited by NVLAP for Transmission Electron Microscopy (TEM), using the AHERA Mandatory Transmission Electron Microscopy Method in Appendix A of 40 CFR 763, subpart E.

5.3.2 Background Air Testing

A. Background Air Testing will be carried out by EnviroNova prior to initiation of work by Contractor in order to establish background levels of contamination.

B. If air monitoring, during work by Contractor, shows an increase in airborne fiber concentrations outside containment system, work shall cease until the source of the contamination is found and remedied to EnviroNova's satisfaction. Any areas that have been contaminated as a result of Contractor's work shall be cleaned by Contractor at their expenses and without impact to the schedule agreed to by the Owner and the Contractor.

C. Background air samples will be analyzed by PCM. TEM analysis of questionable samples will be made available at the expense of Contractor should he request it. All such requests are to be made in writing.

5.3.3 Personal Air Sampling

A. The personal air monitoring will consist of:

1. An 8 hour Time Weighted Average (TWA) for samples collected on 25% of the work force during each eight hour shift for the duration of the project.

2. Continuous personal monitoring to be conducted during preparation, removal, and final cleanup, unless Type C pressure demand respiratory protection is used.

3. Excursion Limit or Short Term Exposure Limit (STEL) sampling shall be performed during all phases of the asbestos abatement project to establish the STEL for each job function. The STEL shall be for a duration of 30 minutes and be collected midway through the work shift.

4. All personal air samples shall be analyzed by NIOSH method 7400 (PCM) or NIOSH method 7402 (TEM) only.

5.3.4 The Pre-encapsulation Test

A. After successful completion of the pre-encapsulation inspection, but prior to removal of the wall and floor coverings, critical barriers, decontamination unit, and use of any encapsulant, EnviroNova may conduct pre-encapsulation air testing.

B. This will consist of filtered air samples of sufficient volume to yield a detection limit of less than 0.01 fibers/cc.

1. The sampling will not begin until Work Area is dry.

2. Sampling will utilize aggressive techniques (a 1 HP leaf blower and electric fans) to re-suspend any dust or material that has settled in Work Area.

3. The pre-encapsulation air testing will be analyzed by PCM (NIOSH 7400) with a concentration of 0.01 fibers/cc being acceptable (see SUB-SUB-SECTION 5.3.6 for discussion of confidence limits).

5.3.5 Conditions for Final Air Testing

A. Final air testing shall take place when removal is complete, the fire-retardant polyethylene sheeting not necessary to the integrity of containment removed, and a visual inspection of Work Area shows that Work Area is clean and dry.

B. Contractor should expect a delay of at least 24 hours from the time the samples reach the laboratory to the time the results are known for all PCM analyses. EnviroNova will make every reasonable effort to obtain these results in a time period suitable to Contractor's work schedule.

C. Contractor should expect at least a 48 hour delay from the time the samples reach the laboratory to the time the results are known for samples analyzed by TEM. EnviroNova will make every reasonable effort to obtain these results in a time period suitable to Contractor's work schedule.

5.3.6 Air Clearance Criteria

A. EnviroNova and Contractor recognize the samples taken for all PCM clearance or pre-encapsulation samples must meet a standard that allows EnviroNova 95% certainty that the sample does not in fact meet the 0.01 fibers/cc final air standard. Ninety-Five percent certainty is defined by the equation: MC + 1.645 (CV) (FAS) = 95% confidence level

B. Where: MC = measured concentration of fibers CV = coefficient of variation FAS = final air standard

C. The results of this equation must be less than the final air standard for any sampled area to pass the test.

D. For samples analyzed by the Transmission Electron Microscope Method, the arithmetic mean of the measured airborne asbestos concentration for the five inside samples must be less than or equal to 70 structures per square millimeter (70 s/mm2).

5.3.7 Final Air Clearance Criteria

A. After Work Area has met the 0.01 fibers/cc standard for the pre-encapsulation test (if performed), final air testing will be conducted and analyzed by Transmission Electron Microscopy (TEM), when the amount of ACM/ACCM removed in Work Area is greater than 160 square feet, or 260 linear feet. Final air testing will consist of five TEM samples inside Work Area the arithmetic mean of the measured airborne asbestos concentration for the five inside samples must be less than or equal to 70 structures per square millimeter (s/mm2). The sampling procedures and guidelines in EPA 40 CFR 763 part III will be followed.

B. When the amount of ACM/ACCM removed in Work Area is less than 160 square feet or 260 linear feet, the results of the pre-encapsulation (PCM) air test will be considered as the criteria for Contractor compliance, unless TEM analysis is required by the Owner.

C. EnviroNova shall, after evaluation site conditions and at their discretion chose and perform the appropriate air testing.

5.3.8 Final Air Testing: Exterior Areas

Final air testing may not be required for exterior, open Work Areas. Instead, a thorough and meticulous inspection will be performed by EnviroNova to determine Contractor compliance.

5.3.9 Final Air Testing: Glove Bag Procedure

A. Each Work Area in which glove bag removal has occurred shall be visually inspected by EnviroNova prior to final air testing.

B. Aggressive sampling procedures will not be used unless Work Areas are fully contained by critical barriers.

C. Each Work Area may be tested and analyzed by the PCM method, using static sampling procedures, unless conditions allow aggressive testing (see 5.3.9.B. above).

D. A TEM final air test of the general areas of glove bag removal may be performed at the Owner's discretion upon failure of a PCM final.

5.3.10 Failure of Final Air Tests

A. When the results of the final air test show values of airborne asbestos in excess of the final air standard, Contractor must re-clean Work Area.

B. The final air testing procedure shall then be repeated at Contractor's expense. This shall include, but not be limited to, the sampling and analysis costs for the monitoring air samples during re-cleaning and the final air clearance, EnviroNova's time and expenses, any and all contractual penalties, liquidated damages, etc., levied by the Owner and/or other trades that may be impacted by the change in schedule.

5.3.11 Availability of EnviroNova

A. EnviroNova will be on-site or on-call and available within two (2) hours.

B. Contractor must notify EnviroNova of the work schedule both at the start of the job and on a daily basis.

C. Departures from this schedule may result in charges for waiting or unnecessary site visits and shall be charged to Contractor.

D. Calls that require EnviroNova to work overtime are subject to the approval by the Owner. Contractor will inform Owner and EnviroNova as soon as they believe overtime work may be required in order to gain approval. Owner will respond with approval within two (2) hours for unscheduled worker in emergency conditions and within eight (8) hours for scheduled overtime work. If Contractor fails to advise Owner and EnviroNova regarding overtime work and it is required, Contractor will be responsible to reimburse EnviroNova for their time and expenses within fifteen days (15) from receipt of invoice.

5.4 COMPLETION

5.4.1 Completion

A. Completion Criteria

1. After final inspections and final air testing are complete and the results known, EnviroNova will advise Contractor of the test results.

2. When a Work Area fails either the inspection or the final air testing, the area must be re-cleaned, re-inspected and re-tested. The sequence of re-cleaning and re-testing shall continue until the area passes the inspection and the final air test. Refer to paragraph 5.3.10 above for additional information.

3. When Work Area has passed final air test, Contractor will be informed immediately.

4. The Contractor shall remove all plastic sheeting, critical barriers, decontamination units, etc. All plastic sheeting and other consumables shall be disposed of as asbestos contaminated waste.

B. Re-establishment of Objects and Systems:

When the project is complete:

1. Relocate all objects moved to temporary locations in the course of the work to their former positions.

2. Where HVAC, mechanical, and electrical systems have been shut down or disconnected, restore these systems to proper working order.

3. Any areas or finishes where damage may have occurred by the actions of the Contractor including, but not limited to tape, staples, nails, spray-poly, water damage to ceiling, wall and floor finishes, furniture and fixtures, exterior areas (landscaping, shrubbery, trees, pots, ornaments, etc.) shall be restored to their original condition by the Contractor at their expense and without adversely impacting the schedule for the project. All restoration shall be to the satisfaction of the Owner. The Owner reserves the right to withhold payment for the lack of restoration of any property destroyed or damaged by the Contractor.

4. Submit to EnviroNova or their designee the Contractors "close out" submittal to include, all manifests, waste hauler trip tickets, Work Area entry and exit logs, personal air monitoring sample results, differential pressure recorders print-outs/charts, accident reports if any or a confirmation statement form the site Supervisor stating that there were no accidents on this project, a confirmation statement from the site Supervisor enumerating the type, location quantity of asbestos containing material removed throughout this project, etc.

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SUB-SECTION 6.0 ALTERNATE PROCEDURES AND VIOLATIONS OF SPECIFICATIONS

This section is intended to be used as a general specification for alternate procedures for all projects for Owner. Consult the specific Scope-of-Work, for each individual building for more specific requirements pertaining to this section, if any.

6.1 Alternate Procedures

A. Procedures described in this specification must be utilized at all times.

B. When specific procedures cannot be utilized, a request must be made in writing to EnviroNova providing details of the problem encountered and recommended alternatives.

C. Alternative procedures must provide equivalent or greater protection than procedures that they replace.

D. Any alternative procedure must be approved in writing by EnviroNova prior to implementation.

6.2 Violations of Specifications

A. Owner will enforce these specifications through EnviroNova.

B. EnviroNova/Owner shall issue cease work orders upon discovery of any violation of these specifications.

C. Minor infractions of the specifications may result in cessation of work until the infraction is corrected.

D. Major violations of this specification may result in the dismissal of the Contractor from all asbestos abatement work, and application of liquidated damages as stated and agreed to by Contractor in contract documents.

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SUB-SECTION 7.0 EMERGENCY PLANNING

A. Emergency planning must be developed by Contractor and approved by Owner and EnviroNova.

B. Emergency procedures must be in written form and prominently posted in clean room and equipment room of worker decontamination unit. Prior to entering Work Area everyone must read and sign these procedures to acknowledge receipt and understanding of work site layout, location of emergency exits, and emergency procedures.

C. Emergency planning must include:

1. Written notification of police, fire and emergency medical personnel of planned abatement activities, work schedule, and layout of Work Area.

2. An employee safety meeting must be conducted by Contractor prior to the commencement of each work shift. The meeting shall be attended by all Contractor's Workers on site, and EnviroNova. All aspects of emergency planning shall be covered in the meeting.

3. Access to fire extinguishers both inside and outside the Work Area.

4. Considerations of fire, explosion, toxic atmospheres, electrical hazards, slips, falls and trips, confined spaces and heat related injury.

5. A copy of the emergency procedures and evidence employee training in these procedures shall be provided to Owner.

D. Evacuation and Emergency Decontamination Procedures

1. Workers must be trained in evacuation procedures in the event of workplace emergency.

2. For non-life threatening situations, Workers injured or otherwise incapacitated must decontaminate following normal procedures, with assistance from fellow workers if necessary, before exiting the workplace to obtain proper treatment.

3. For life-threatening injury or illness, worker decontamination shall take least priority after measures to stabilize the injured worker, remove him from the workplace and secure proper medical treatment.

4. Telephone numbers of all emergency response personnel must be prominently posted in the clean room and equipment room, along with the map of, and clearly marked route to, the location of the nearest hospital emergency room.

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SUB-SECTION 8.0 FIRE SAFETY AND SAFE EGRESS

8.1 FIRE PROTECTION AND PREVENTION

8.1.1 Fire Protection Program

A. Contractor shall be responsible for the development of a fire protection program to be followed throughout all phases of demolition and abatement work, and shall provide firefighting equipment as specified in this section.

B. As fire hazards occur, there shall be no delay in providing the necessary equipment.

8.1.2 Fire Extinguishers

A. Contractor shall provide a fire extinguisher, rated not less than 2A, for each 3,000 square feet of demolition/abatement Work Area.

B. Travel distance from any point of the protected area to the nearest extinguisher shall not exceed 100 linear feet. This distance shall decrease in areas of limited mobility.

C. A fire extinguisher may be substituted with a 2" diameter garden hose not exceeding 100 linear feet in length.

8. 2 SAFE EMERGENCY EGRESS

8.2.1 Application

This part contains general fundamental requirements essential to providing a safe means of egress from fire and similar emergencies. Nothing in this part shall be construed to prohibit a better type of containment construction, more exits, or otherwise safer conditions than the minimum requirements specified in this part.

8.2.2 Fire Alarm Facilities

A. In each Work Area, provide fire alarm facilities to Workers so they can escape and exit.

B. These fire alarm facilities shall be provided where necessary to warn worker and building occupants of the existence of fire, as a fire itself may not provide adequate warning.

8.2.3 Protection of Workers and Building Occupants

A. No existing buildings shall be occupied during demolition and abatement activities.

B. No flammable or explosive substances or equipment for demolition/abatement shall be introduced in a building of normally low or ordinary hazard classification, provided the condition of use and safeguards do not create any additional danger or handicap to egress beyond the normally permissible conditions in the building or Work Area.

C. Each exit, way of approach, and way of travel from an exit to the street or open space shall be continuously maintained free of all obstruction or impediments to instant use in the case of fire or other emergency.

8.3 MEANS OF EGRESS

8.3.1 Definitions

A. Exit Access: That portion of a means of egress that leads to an entrance to an exit.

B. An Exit: That portion of a means of egress that is separated from all other spaces of demolition/abatement or equipment as a way of travel to the street or open area.

C. High Hazard Contents: High hazard contents shall be classified as those materials, substances, or equipment that are able to rapidly burn or from which toxic gases, fumes, or explosions may occur in the event of fire.

8.3.2 Means of Egress

A. If a door is present at the exit to the decontamination unit, from a Work Area to an exit, or to a way of exit access, it shall be of the side-hinged, swinging type. It shall swing in the direction of exit travel.

B. The minimum width of any way of exit access shall in no case be less than twenty-eight inches (28”). Where a single way of exit access leads to an exit, its capacity in terms of width shall be at least equal to the required capacity of the exit to which it leads. Where more than one way of exit access leads to an exit, each shall have a width adequate for the number of persons it must accommodate.

8.3.3 Emergency Exits

A. For each Work Area, Contractor shall provide an alternate emergency exit.

B. The alternate emergency exit shall consist of a door that leads to a way of exit access. The door shall be covered and sealed with fire-retardant polyethylene sheeting.

C. Fire-retardant polyethylene sheeting covering the emergency exit shall be clearly outlined and attached in a manner that allows "tear away" in case of emergency and marked as an emergency exit. A utility knife shall be permanently attached to the fire-retardant polyethylene sheeting to provide access to the emergency exit.

D. Contractor shall install arrows throughout the Work Area at two feet (2’) and five feet (5’) above the floor indicating the direction to the nearest exit.

8.3.4 Emergency Lighting

A. In case of electrical failure during fire, Contractor shall provide battery-operated lights or lamps in the Work Area.

SECTION 02 83 00 LEAD ABATEMENT

SUB-SECTION 01 GENERAL LEAD REMOVAL SPECIFICATIONS

1.0 GENERAL

1.1 Description

A. This section consists of furnishing all work necessary to perform the removal, packaging, handling, transportation, and disposal of lead-containing materials and lead-contaminated materials located within the project limits. All work shall be performed in accordance with all federal, state, and local requirements and statutes.

B. The work specified herein shall be the removal of lead-containing materials by persons knowledgeable, qualified, and trained in the removal, treatment, handling, packaging, transportation, and disposal of lead-containing materials, and the subsequent cleaning of the affected environment. These persons shall comply with all federal, state and local regulations and mandated work practices, and shall be capable of performing the work in the contract.

1.2 Scope-of-Work

A. General Requirements: Work of this section includes, but is not limited to, the following:

B. Providing dust control as required to protect the Contractor's Workers, Owner's staff, visitors/guests, and passers-by from lead exposure. The lead concentration in the air outside of the lead work control area but inside of the Work Area (inside of the construction fence) shall not exceed 10 micrograms per cubic meter (µg/m3). The airborne lead concentration outside of the Work Area shall not exceed the background airborne lead concentration as tested by EnviroNova (HPM) prior to the commencement of any on-site activity.

C. The work includes protecting the site (specifically the soil surrounding the building and landscaping), the building structure, facility, any and all furniture, fixtures, etc., from further lead contamination.

D. The Contractor shall perform employee exposure monitoring as required by Cal/OSHA during the project

E. The following precautions should be taken prior to initiating demolition activities involving any lead-containing material:

1. The Contractor shall not perform any lead-related demolition activities until an initial exposure assessment has been performed and submitted to the Owner's Representative.

2. The Contractor shall install lead dust control measures, lead waste and debris retention areas, worker protection, and decontamination areas in accordance with this Section, the Contractor's work plan, and lead exposure assessment data.

3. Pre-Project Initial Exposure Assessment and Test Section: Prior to performing any lead-related demolition work, the Contractor shall perform an initial exposure assessment as described in 8 CCR 1532.1. The initial exposure assessment shall be performed through the preparation of "Lead-Related Construction Demolition Test Sections", if deemed necessary. The Test Section work shall be performed a minimum

of two weeks prior to initiating lead-related demolition work at the building. During work on the Test Section, all Supervisors/Competent Persons shall be certified as Lead-Related Construction Supervisors and all Workers shall be certified as Lead-Related Construction Workers in accordance with 17 CCR, Division 1, Chapter 8.

F. Lead-Related Demolition Scope-of-Work: The Contractor shall remove, package, transport, and properly dispose of the lead-containing and lead-contaminated items referred to in Appendix A for specific locations. Quantities shall be field verified.

G. Where exterior lead containing material is encountered:

1. Remove or protect bushes and landscaping from the perimeter of the building out to fifteen feet (15') from the base of the buildings as required for soil protection. When necessary, cut the bushes and landscaping flush with the ground. Dispose of the bushes and landscaping as construction debris following removal.

2. Remove, package, transport, and properly dispose of all lead-containing painted exterior components on the buildings including but not limited to exterior wood cladding (siding), door components, window components, fascia boards and roof overhang components. Remove, package, transport, and properly dispose of the lead-containing window glazing located on the buildings. Remove, package, transport, and properly dispose of all lead-containing painted interior doors in the buildings. The Owner has not performed waste characterization sampling of these items. The Contractor shall be responsible for performing waste characterization sampling. All work associated with the removal of the exterior components and interior doors shall be performed in accordance with this section, the Contractor's lead-related demolition work plan, and the procedures utilized during the Test Section work.

3. Remove, package, transport, and properly dispose of all lead-containing painted components located on the interior of buildings. These components include, but are not limited to, gypsum wall and ceiling board systems, wood wallboard, wood base cove, and interior door frame components. The Owner has not performed waste characterization sampling of these items. The Contractor shall be responsible for performing waste characterization sampling. All work associated with the removal of the exterior components and interior doors shall be performed in accordance with this Section, the Contractor's lead-related demolition work plan required by Section 1.8, and the procedures utilized during the Test Section work.

4. The Owner may sample the soil around the perimeter of the buildings. The Contractor is responsible for protecting the soil on the perimeter of the building from becoming contaminated with lead in excess of 350 ppm or established 'baseline' levels – whichever is lower. After completion of the lead-related demolition work, the Owner will again sample the soil. The testing and analysis of the soil samples will require five to eight working days to complete. If the lead concentration in the soil exceeds 350 ppm, or established 'baseline' levels – whichever is lower, the Contractor shall perform the following work at no additional cost to the Owner.

5. The Contractor shall remove the top six inches (6") of soil from the base of the building/ point of work to a minimum distance of ten feet (10') from the point of work and extending out to the perimeter of the Work Area. Contractor shall perform the removal of the soil in two (2) days or less.

6. The waste soil shall be packaged and placed into waste containers in accordance with the requirement of the waste transporter and disposal facility.

7. Contractor shall retain the documentation that EnviroNova that was on-site during the lead-related demolition project to perform perimeter air monitoring.

8. At the completion of the soil removal project, EnviroNova will collect representative waste characterization samples of the soil waste. The soil waste samples will be evaluated for their conformance with the requirements of Title 22 and the requirements of the waste transporter and disposal facility.

9. The testing and analysis of the soil waste characterization samples will require five to eight business days to complete. Contractor shall leave the waste containers on the project site until receipt of the waste sample characterization sample results.

1.3 Related Work

SECTION 02 82 13–ASBESTOS RELATED DEMOLITION WORK

1.4 Required Licensure and Certification

A. Licensure – For all Contractor(s) or Sub-Contractor(s) involved in any facet of lead related work enumerated as part of this project the following license(s) shall be current and be maintained in current status throughout the duration of the project.

B. A copy of the current California Contractors State License Board (CSLB) License (minimum requirements are a Class B license and a California Department of Public Health (CDPH) contractor's lead certification).

C. US EPA Certification under the Toxic Substances Control Act (TSCA) Section 402 Repair, Renovation and Painting activities (RRP) pursuant to 40 CFR Part 745.89.

D. Contractors having endorsements, riders or qualifiers on any of their licenses such as (but not limited to) 'for bidding purposes only' etc. are ineligible to perform work as part of this contract.

E. Transportation of Lead-Containing Materials: Contractor shall be a registered hazardous waste transporter with the State of California, Department of Toxic Substances Control. If the Contractor is not a registered hazardous waste transporter, the Contractor shall have a listed sub-Contractor that is a registered hazardous waste transporter with the State of California, Department of Toxic Substances Control. Copies of the current, relevant registration certificate(s) shall be submitted as a part of the pre-job submittal.

F. Throughout the duration of the project, all Supervisors/Competent Persons shall be certified as Lead-Related Construction Supervisors and all workers shall be certified as Lead-Related Construction Workers in accordance with 17 CCR, Division 1, Chapter 8.

1.5 Applicable Documents and Regulations

A. It is the responsibility of the Contractor to know the current regulations controlling work and to perform all project related work in accordance with such regulations that provide for worker and public safety against lead exposure.

B. The publications listed below form a part of this specification to the extent referenced. The current issue of each document shall govern. Where conflict among requirements or with these Specifications exists, the more stringent requirements shall apply. The publications are referenced in the text by basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR Part 1910	Occupational Safety and Health Standards for General Industry
29 CFR Part 1910.134	Respiratory Protection
29 CFR Part 1926	Occupational Safety and Health Regulations for Construction
29 CFR Part 1926.62	Lead

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

40 CFR Part 148	Hazardous Waste Injection Restrictions
40 CFR Part 260	Hazardous Waste Management Systems: General
40 CFR Part 261	Identification and Listing of Hazardous Waste
40 CFR Part 262	Standards Applicable to Generators of Hazardous Waste
40 CFR Part 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR Part 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR Part 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR Part 268	Land Disposal Restrictions

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 701	(1989) Methods of Fire Test for Flame-Resistant Textiles and Films

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH OSHA Booklet 3142	Lead in Construction

CALIFORNIA CODE OF REGULATIONS (CCR)

8 CCR Part 1532.1	Lead
8 CCR Part 5194	Hazard Communication

17 CCR, Div. 1, Cpt. 8	Accreditation, Certification, and Work Practices for Lead-Based Paint and Lead Hazards
22 CCR, Div. 4, Cpt. 30	Hazardous Waste Handling
26 CCR Part 3203	Illness and Injury Protection
26 CCR Part 3220	Emergency Action Plan
26 CCR Part 3221	Fire Prevention
26 CCR Part 5144	Respiratory Protection

CALIFORNIA HEALTH AND SAFETY CODE Section 25157.8 (from AB 2784 Strom-Martin, 1998)

UNDERWRITERS LABORATORIES (UL)

UL 586	(1990) High-Efficiency, Particulate, Air Filter Units

CALIFORNIA LABOR CODE

Section 6501.5-6505.5

ALL OTHER FEDERAL, STATE, COUNTY AND LOCAL CODES AND ORDINANCES AS APPLICABLE.

1.6 Notifications and Permits

A. Contractor shall make all required written notifications or applications to regulatory agencies including the following:

1. California Division of Occupational Safety and Health (Cal/OSHA) - Lead Work Pre-Job Notification shall be accordance with 8 CCR Part 1532.1. California Department of Public Health (CDPH) Form CDPH 8551

2. Local or facility agencies as applicable.

1.7 Supervisor/Competent Person and Workers

All valid and current Supervisor/Competent Person and Workers documentation shall be physically present on site, prior to any lead related work being performed by that person. Failure to comply with this requirement shall render the person ineligible to work until the required documentation is available on site.

A. The Contractor shall have a California Department of Public Health (CDPH) Lead-Related Demolition Supervisor/Competent Person present at all times while work on this Contract is in progress. The Lead-Related Construction Supervisor/Competent Person shall possess the following training and certifications regardless of the results of the Test Section work. All certificates are to remain current and complete throughout the duration of the project.

B. The Lead-Related Demolition Supervisor/Competent Person shall have successfully completed training to meet the requirements of 8 CCR Part 1532.1 and 17 CCR, Division 1, Chapter 8. Training shall be

provided prior to the time of job assignment and, at a minimum, annually. The Supervisor/Competent Person shall be thoroughly familiar and experienced with lead removal and related work, and shall be familiar with and enforce the use of all safety procedures and equipment. He/she shall be knowledgeable of all EPA, OSHA, and NIOSH requirements and guidelines. Additionally, the Supervisor/Competent Person shall be certified as a Lead-Related Construction Supervisors in accordance with 17 CCR, Division 1, Chapter 8.

C. Throughout the duration of the project, including during work on the Test Section, all workers shall have received training in accordance with 8 CCR Part 1532.1 and 17 CCR, Division 1, Chapter 8. The training shall be provided prior to the time of job commencement and, at least, annually. Additionally, all workers performing work shall be certified as Lead-Related Construction Workers in accordance with 17 CCR, Division 1, Chapter 8. All certificates are to remain current throughout the duration of the project. Throughout the duration of the project the Lead-Related Worker training and certification requirements listed below will be required. The Contractor shall submit documentation that the workers have received the training. The training shall be for a minimum of eight hours. Worker training including the following information is required at a minimum. All certificates are to remain current and complete throughout the duration of the project.

1. An employee's right to access to records under 29 CFR Part 1910.1020.
2. The contents and requirements of 29 CFR Part 1926.62 and 8 CCR 1532.1.
3. The specific nature of the operation that could result in exposure to lead.
4. The purpose, proper selection, fitting, use, and limitations of respirators.
5. Purpose and description of the medical surveillance program and the medical removal protection program, including information concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females and hazards to the fetus and additional precautions for Workers who are pregnant).
6. Relevant engineering controls and good work practices.
7. The contents of any compliance plan in effect.
8. Instructions that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician.

D. If the Contractor's means and methods change from those presented in the lead-related demolition work plan and during the work of the Test Section, the Contractor shall perform another exposure assessment to determine the training requirements for the lead-related demolition workers.

E. If the ongoing personal air monitoring performed by the Contractor indicates that the Action Level is being exceeded, the Contractor shall provide lead-related demolition workers with the training and certifications required above.

F. Current and complete documentation from a physician that all Workers or agents who may be exposed to airborne lead in excess of the action level have received a comprehensive medical examination as required by 29 CFR Part 1926.62 and 29 CFR Part 1910.1200 and will receive continued medical surveillance, including biological monitoring, as required by 29 CFR Part 1926.62 and 29 CFR Part 1910.1200 and by the state and local regulations pertaining to such work. Records shall be retained, at Contractor's expense,

in accordance with 29 CFR Part 1910.1020. Biological monitoring is to include Blood Lead Level (BLL) and Zinc Protoporphyrin (ZPP). These tests are to be performed not more than 30 calendar days PRIOR to the commencement of work and results be presented prior to the commencement of the removal of any lead containing materials. If the work schedule is phased, the tests are to be repeated prior to the commencement of each phase of work; unless the close of one phase, and the commencement of the next phase, is less than 30 calendar days apart.

G. Current and complete documentation from a physician that all Workers or agents who may be exposed to airborne lead in excess of the action level have received medical monitoring in accordance with 29 CFR Part 1926.62 to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. The Contractor must be aware of and provide information to the examining physician about unusual conditions in the workplace environment (e.g. high temperatures, humidity, and chemical contaminants) that may impact on the Worker's ability to perform work activities.

H. Current and complete documentation of respirator fit-testing, performed within the last twelve months, for all Contractor Workers and agents who must enter the Work Area. This fit testing shall be in accordance with qualitative procedures as required by OSHA regulations or be quantitative in nature.

1.8 Submittals

A. Submit, as applicable, the following to the Owner's Representative for approval within ten (10) days of receiving the "Notice to Proceed" or at least ten (10) Working Days prior to the start of work. These submittals are in addition to those required in any other section(s) or sub-section(s) of these documents. This document shall be submitted by the Contractor performing the work and not by any other. Include at the very least the following:

B. Notifications. All notifications shall be current and valid throughout the duration of the project. Any material changes to the notification, i.e., the quantity of materials being removed, the physical materials being removed, the duration of the project, etc. shall require revisions to the regulatory agencies, with copies provided to the HPM on site. Copies of the written notification and confirmations at least to/from the following regulatory agencies will be required:

1. California Division of Occupational Safety and Health (Cal/OSHA) Lead Work Area Pre-Job Notification.

2. Notification to the California Department of Public Health (Form 8551).

C. Waste Haulers – copies of:

1. Identification of the Waste Hauler(s) for both Hazardous and Non-Hazardous Lead Waste for this Project;

2. California Department of Toxic Substances Control (DTSC) Waste Transporter registration for each Waste Hauler;

3. California Department of Motor Vehicles (DMV) Motor Carrier Permit for each Waste Hauler;

4. U.S. Department of Transportation (DOT) Registration and U.S. Environmental Protection Agency (EPA) acknowledgement of Notification of Hazardous Waste Activity for each Waste Hauler *(only required if waste is to be transported out of State)*;

5. Statement indicating that all waste generated on this specific site shall be transported by/disposed of by licensed, insured and certified personnel/locations; and

6. Statement that the types of Waste Containers being used for this Project will be accepted by the Waste Hauler(s) for the storage and transport of both Hazardous and Non-Hazardous Waste.

D. Waste Disposal Facility - Landfill and/or Recycling Facility – copies of:

1. Identification of the Landfill(s)/Recycler(s) to be used for the disposal of both Hazardous and Non-Hazardous Lead containing Waste generated at the Project site;

2. Permits for the Landfill(s)/Recycler(s) to be used for the disposal of both Hazardous and Non-Hazardous Lead waste generated at the Project site;

3. Identification of the Types of Waste accepted at the Landfill(s)/Recycler(s);

4. Identification of the Types of Waste Profiling required by the Landfill(s)/Recycler(s); and

5. Statement that the types of Waste Containers being used for this Project will be accepted by the Landfill(s)/Recycler(s) for both Hazardous and Non-Hazardous Waste.

E. Licensure – For all Contractor(s) or Sub-Contractor(s) involved in any facet of lead related work enumerated as part of this project the following license(s) shall be current and be maintained in current status throughout the duration of the project.

F.

1. A copy of the current California Contractors State License Board (CSLB) License (minimum requirements are a Class B license and California Department of Public Health (CDPH) contractor's lead certification).

2. US EPA Certification under the Toxic Substances Control Act (TSCA) Section 402 Repair, Renovation and Painting Activities (RRP) pursuant to 40 CFR Part 745.89.

3. Contractors having endorsements, riders or qualifiers on any of their licenses such as (but not limited to) 'for bidding purposes only' etc. are ineligible to perform work as part of this contract.

G. Work Plan – A detailed written lead-related demolition work plan including, but not limited to, the following:

1. Identification of all Lead Scope-of-Work items and Trigger Tasks that are part of this Project, as well as, the waste streams the Contractor anticipates generating during the course of performing the work listed in the Scope-of-Work;
2. Identification of entire Work Sequence (schedule) for this Project, including specifics of materials being removed/stabilized and the correlation between Work Areas and types of work (Lead, Asbestos, PCB, etc. as applicable);
3. Identification of abatement duration;
4. Identification of dust control measures;
5. Identification of Work Area preparation;
6. Identification of construction for decontamination enclosure systems;
7. Identification of demarcation protocols. i.e., installation of Lead barrier tape, barrier fence, Lead Work signage, etc.;

8. Identification of Work Area isolation protocols;
9. Identification of detailed specific Lead containing materials removal procedures;
10. Identification of Lead containing/contaminated debris clean-up and disposal procedures; and
11. Identification of Personal Protective Equipment (PPE) to be utilized as part of this project;
12. Identification of waste handling, storage and disposal procedures;
13. Identification of construction for chutes, (if required for this project).

H. HEPA vacuums, differential pressure air filtration devices and other local exhaust ventilation equipment – copies of:

1. Manufacturer's certification that HEPA vacuums, differential pressure air filtration devices, filters and other local exhaust ventilation equipment conforms to ANSI Z9.2-79.
2. Notification that required onsite testing has been scheduled for any and all differential pressure units, HEPA vacuum cleaners, etc. to ensure that the filtration efficiency meets the criteria for HEPA-filtration devices, i.e., 99.97% efficiency at arresting mono-dispersed particulate matter greater than 0.03 micrometers in diameter.

I. SDS – Contractor shall submit copies of the Material Safety Data Sheet, fire retardant certification or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for each surfactant, encapsulating material, spray glue, mastic removal agent, plastic sheeting, adhesive/duct tape, etc. or other chemicals/products for use on this project, including the specific worker protective equipment proposed for use with the material indicated.

J. Personnel Documentation

1. Identification of the project's Lead-Related Supervisor who is experienced in administration and supervision of lead-containing material demolition projects, including work practices, protective measures for building and personnel, disposal procedures, etc. including a legible photocopy of the California Department of Public Health (CDPH) Certified Lead Construction Supervisor's card.
2. Current and complete documentation that the Contractor's Lead-Related Construction Supervisor/Competent Person and Lead-Related Demolition Workers performing Lead-related demolition, disposal, and air sampling operations have received training and are certified including a legible photocopies of the California Department of Public Health (CDPH) Certified Supervisor and Certified Lead Worker cards.
3. Provide as part of the pre-job submittal a letter from the Contractor, signed by a responsible and authorized officer of the Contractor's company certifying the following: *"This is to certify that all our personnel involved with any lead containing or coated materials/surfaces are subject to current and valid medical monitoring in accordance with 29 CFR Part 1926.62 and 29 CFR Part 1910.1200 and that they will receive continued medical surveillance, including (a) the ability to work while wearing required respiratory protection without suffering adverse health effects and (b) biological monitoring [include Blood Lead Level (BLL) and Zinc Protoporphyrin (ZPP)], as required by 29 CFR Part 1926.62 and 29 CFR Part 1910.1200 and by all state and local regulations pertaining to such work. Furthermore, we certify that all relevant records shall remain valid and current throughout the project and that historical records will be retained by us, in accordance with 29 CFR Part 1910.1020."* The Contractor will issue this letter and identify and list (by name) all of their Workers who will be on site for this project or, alternatively issue an individual letter per Worker.

4. Current and complete documentation of respirator fit-testing for Contractor's Workers and agents who must enter the Work Area. This fit-testing shall be in accordance with qualitative procedures as required by OSHA regulations or be quantitative in nature

K. Respirators and Filters – Copies of manufacturer's documentation and certification of NIOSH approvals for respiratory protective devices utilized on site, including manufacturer's certification of NIOSH approval of respirator cartridges (organic vapor, acid gas, mist, dust, high efficiency particulate) and High Efficiency Particulate Air (HEPA) filtration capabilities for all cartridges and filters.

L. Testing Laboratory – Identification of the Independent Testing Laboratory (name, address, and telephone number) selected to perform analysis of personal air samples. Documentation shall be provided that the laboratory selected to perform the analyses is an EPA National Lead Laboratory Accreditation Program (NLLAP) accredited laboratory and is rated proficient in the NIOSH/EPA Environmental Lead Proficiency Analytical Testing Program (ELPAT), including accreditation for heavy metal analysis. The documentation shall list experience relevant to the analysis of lead in air and include a Quality Assurance and Quality Control Program. Currently, the American Association for Laboratory Accreditation (AALA) and the American Industrial Hygiene Association (AIHA) are the EPA recognized laboratory accreditation agencies. Documentation must also be provided that the laboratory is certified by the California Department of Public Health (CDPH).

M. Site Specific Documentation – copies of:

1. Identification of Work Area(s) at the site;
2. Identification of the nearest medical facility and route map/directions to the medical facility;
3. Emergency contact information and numbers for emergency services as well as the Contractors' emergency contact personnel and information;
4. Identification of on-site emergency meeting location; and
5. Identification procedures for personnel accounting during an emergency.

N. Contractor General Documents – copies of:

1. General Injury & Illness Prevention Program in compliance with 26 CCR 3203.
2. General Emergency Action Plan in compliance with 26 CCR 3220.
3. General Fire Prevention Plan in compliance with 26 CCR 3221
4. Respiratory Protection Program in compliance with 26 CCR 5144.

O. Hazardous Waste Manifests, Non-Hazardous Waste Data forms, trip tickets and disposal receipts for lead waste materials removed from the Work Area must be received within 24 hours of the transport.

P. On-Site Documentation – Documents to be provided on-site throughout the duration of the project:

1. Provide on a DAILY basis, prior to the start of the shift, results from the personal air samples collected during the abatement process of the prior shift.
2. Provide on a DAILY basis, prior to the start of the shift, copies of the containment entry log pertaining to the abatement process of the prior shift.
3. Provide on a DAILY basis, prior to the start of the shift, copies of the Manometer logs pertaining to the abatement process of the prior shift.

4. Copies of the Safety Data Sheets (SDS) for solvents, encapsulants, wetting agents, neutralizers, any other chemicals/products used on site and replacement materials, as necessary.

Q. Following completion of work on the Test Sections, submit to the Owner's Representative documentation that includes the following (the submittals required shall be submitted no later than five (5) business days following completion of the Test Section work):

1. All personal air sampling performed by the Contractor during the Test Section work. The personal air sampling results shall be provided as 8-hour TWA results.
2. A description of the Trigger Tasks utilized during the Test Section work.
3. Proposed changes in work procedures, if any, from those that were proposed in the original work plan.

R. Upon completion of all lead-related demolition activities, submit to the Owner's Representative documentation that includes, without limitation, the following (the submittals required shall be submitted no later than 20 business days following the Contractor's demobilization from the project site):

1. Work Area entry/exit logbook. The logbook must record name, affiliation, time in, and time out for each entry into the work site.
2. The log of Manometer readings showing the pressure differential maintained throughout the project.
3. OSHA, Cal/OSHA, California Department of Public Health (CDPH) required personal exposure air monitoring results.
4. Post project Biological monitoring for each employee who has worked at the site during any phase of lead related work is to include Blood Lead Level (BLL) and Zinc Protoporphyrin (ZPP). These tests are to be performed not more than 7 calendar days AFTER the conclusion of work
5. Accident/incident reports where injury or damage has occurred on or to the Owner's property.
6. Hazardous waste manifests, non-hazardous waste data forms, trip tickets and disposal receipts for lead waste materials removed from the Work Area within 24 hours of the transport.

1.9 Notices and Postings

A. Post in the wash station/decontamination station, a list containing the names, addresses, and telephone numbers of the Contractor, Owner Representative, EnviroNova, and emergency contact numbers.

B. Post at the job site a list of persons authorized to enter the lead-related demolition Work Area.

C. Additional postings shall include:

1. Visitor entry and exit log;
2. Employee daily sign in/out log;
3. Work Area entry and exit procedures; and
4. Emergency procedures.

D. One copy of Cal/OSHA and Department of Health Services regulations.

E. Posted Warnings and Notices: The following regulations, warnings, and notices shall be posted at the work site in accordance with 29 CFR Part 1926.62 and 8 CCR Part 1532.1.

1. Warning Signs and Labels: Warning signs shall be provided at building entrances and approaches to lead work control areas containing airborne lead debris. Signs shall be located at a sufficient distance from the lead work control areas that will allow personnel to read the sign and take the necessary protective actions required before entering the lead work control area.

2. Post at least two (2) safety warning signs, in English and Spanish, which follow the "Sample Format Warning Sign" shown below:

Sample Format Warning Sign Minimum Size – "24" x 36" Material – Aluminum or Fiberglass Script:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

F. Posting required by local, state and federal agencies exercising jurisdiction over the Work Area. These are to include, but not be limited to, warning notices, notices of proposed work activity, copies of notifications to local and state agencies, etc.

1.10 Work Area Security

A. The lead work control area shall be restricted only to authorized personnel, including Contractor, Contractor's Workers, Owner's Representative(s), and federal, state, and local inspectors.

B. Entry into the lead work control area by unauthorized individuals shall be reported immediately to the Owner's Representative.

C. Contractor shall be responsible for Project site security during lead-related demolition operations in order to protect work efforts and equipment.

1.11 Personal Protection and Safety

A. Contractor alone shall be responsible for the safety, efficiency, and adequacy of his/her appliances, methods, and for any damages that may result from his/her operations, improper construction practices, or maintenance. Contractor shall erect and properly maintain at all times as required by the conditions and progress of the work, proper safeguards for the protection of workmen and the public and shall post warning signs around the job site and at any and all entrances / entryways to the Work Area(s).

B. Work shall be performed in accordance with the requirements of applicable regulations including, but not limited to 29 CFR Part 1926.62, 8 CCR Part 1532.1, and 17 CCR, Division 1, Chapter 8. Matters of interpretation of the standards shall be submitted to the appropriate agency for resolution before starting work. Where these requirements vary or conflict, the most stringent shall apply. In the event that work practice variances are granted by the governmental agency having jurisdiction over the work, these variances will be forwarded to the Owner and/or the Owner's representative as soon as the variance has

been issued. A copy of the variance must also be posted at the entryway to the Work Area or if this is not possible, in a prominent place.

C. Respiratory Protection Requirements: A respiratory protection program shall be established as required by 29 CFR Part 1926.103 and 29 CFR Part 1926.62 and in accordance with 29 CFR Part 1910.134. An approved respirator shall be furnished to each employee and visitor required to enter a lead work control area. A fit test shall be conducted in accordance with 29 CFR Part 1926.62.

1. Air-purifying respirators shall be approved by NIOSH for use with dust, fumes, and mists having permissible exposure limits less than 0.005 milligrams per cubic meter (i.e., have P-100 filters) and for other hazardous airborne contaminants that may be encountered, as determined by the Competent Person. Respirators shall comply with the requirements of 29 CFR Part 1926.62 and shall be used in accordance with 29 CFR Part 1926.103, and 29 CFR Part 1910.134.

2. A sufficient supply of respirator filters shall be maintained at the work site to provide new filters to Workers, Owner's authorized visitors, and government regulatory personnel throughout the duration of the project. Filters shall be replaced according to the manufacturer's recommendations, when breathing becomes difficult, or if the filter becomes wet. At any time during on-site work activity, the Contractor shall maintain on-site and readily accessible three (3) new respirators, one in each size, small, medium and large along with the requisite filters/cartridges for the type of work being performed. These respirators will be kept in readiness for the Owner/Owner's representative or any governmental agency representative having jurisdiction over the project. Additionally, the Contractor shall make available to HPM two (2) sets of new North 7700 Series Respirator Filter Cartridges throughout the duration of the project. These filter cartridges shall be appropriate to the work being conducted on site i.e., P100 HEPA cartridge and/or stacked P100 HEPA + Organic Vapor cartridge, etc.

3. Respirators shall be fit-tested utilizing irritant smoke or isoamyl acetate a minimum of every 6-12 months. Either the standard Irritant Smoke Protocol or Isoamyl Acetate Protocol may be used.

D. A Hazard Communication Program shall be implemented in accordance with 29 CFR Part 1926.59.

E. Contractor, EnviroNova, and the Owner's Representative shall arrange and hold a preparatory inspection meeting immediately prior to beginning the Test Section, following completion of the Test Sections to discuss the results, following completion of the waste characterization sampling and analysis, and prior to beginning the lead-related demolition work.

F. Right-to-know notices shall be placed in clearly visible areas of the work site in compliance with Federal, State, and local regulations.

G. Daily personal air monitoring results shall be placed in a clearly visible area of the work site and shall be prepared so as to be easily understood by the workers.

H. A list of emergency telephone numbers shall be posted at the site. The list shall include numbers of the local hospital, poison control center, police and fire departments, Government, Contractor, and Owner representatives who can be reached 24 hours per day, and professional consultants directly involved in the project.

I. Sufficient quantities of health and safety equipment and supplies as required by 29 CFR Part 1926.62 and 8 CCR Part 1532.1, and other materials and equipment needed to complete the project, shall be available and kept on site. Specific health and safety equipment to be utilized at all times during performance of lead-related demolition work includes the following:

1. Disposable full body suits. The disposable full body suits shall have head and foot covers and shall be of a sufficient size to prevent tearing during performance of the work;
2. Disposable rubber glove;.
3. Hard hats;
4. Safety shoes or boots;
5. Eye and hearing protection; and
6. A wash/decontamination station shall be provided on the site at all times that lead-related demolition work is being performed.

1.12 Hazmat Project Manager Services

A. The Owner has contracted with EnviroNova (HPM) to perform Contractor and project monitoring services including the following:

1. Collect side-by-side Contractor Worker exposure air samples during the lead-related demolition work.
2. Collect perimeter air samples during the lead-related demolition work.
3. Collect waste characterization samples during the lead-related demolition work.

B. Stop Work Orders. The HPM will stop work in the following situations:

1. If the airborne lead concentration exceeds 10 $\mu g/m^3$ outside the lead-related demolition Work Area but inside the construction zone.
2. If the airborne lead concentration outside of the lead-related demolition Work Area exceeds background levels established before the commencement of work.
3. If the Contractor's means and methods change, work will be stopped to establish a new exposure assessment.
4. If personal air monitoring indicates that new respiratory protection is required.
5. If the written specifications are being violated or if the Owner issued instructions are being circumvented.

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SUB-SECTION 02 MATERIALS AND EQUIPMENT

2.0 MATERIALS and EQUIPMENT

2.1 Materials

A. General:

Contractor shall adhere to the following:

1. All plastic, spray-on strippable coatings, electrical equipment, mechanical equipment and structural materials used shall be UL-certified as fire retardant or non-combustible.

2. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer, brand name (where applicable), and model.

3. Polyethylene sheeting utilized for worker decontamination and barriers shall be black or opaque in color and shall be a minimum of 6-mil in thickness. All polyethylene shall be fire retardant.

4. Waste containers utilized during the project shall be properly labeled as required by 29 CFR Part 1926.62, 8 CCR Part 1532.1, and, if applicable, 22 CCR 66504.

5. Warning signs as required by 8 CCR Part 1532.1 and 29 CFR 1926.62 shall be utilized during lead-related demolition activities.

6. PVC Safety/Barrier Fence (minimum of 4' high) to isolate the Work Area shall be utilized during any lead-related activities.

2.2 Equipment

A. General:

1. HEPA vacuums equipped with HEPA-filtration and operated in accordance with ANSI Z9.2-79.

2. Differential pressure (negative pressure) air filtration devices and other local exhaust ventilation equipment conform to ANSI Z9.2-79. On site testing will be required for any and all differential pressure units, HEPA vacuum cleaners, etc. to ensure that the filtration efficiency meets the criteria for HEPA-filtration devices, i.e., 99.97% efficiency at arresting monodispersed particulate matter greater than 0.03 micrometers in diameter.

3. Respirators shall be furnished to the workers by the Contractor. The respirators shall have been tested and approved by National Institute of Occupational Safety and Health (NIOSH) for use in lead contaminated atmospheres. Respirator usage during the project shall be determined by the results of the sampling and analysis performed during the Test Section and shall be in accordance with the requirements of 8 CCR 1532.1 and the work plan submitted by the Contractor. The respiratory requirements below shall be utilized at a minimum:

    a. Half-face air purifying respirators equipped with P-100 filters at a minimum shall be utilized during the Test Section Work.

b. If the Test Section work, or periodic personal monitoring indicates that the airborne lead concentration will exceed the Action Level, the Contractor shall utilize respiratory protection as indicated by the actual airborne lead concentration.

c. If the Test Section work indicates that the airborne lead concentration will not exceed the Action Level, the Contractor at their discretion may downgrade the respiratory requirements for the project. The minimum permissible respiratory protection throughout the project, permitted by these specifications is a half-face (half-mask) negative pressure respirator equipped with P-100 respirator. This minimum standard shall be adhered to even in the event that the Test Phase of the project determines that respiratory protection is not required. This supersedes any and all instructions to the contrary that may be found in these documents.

4. Contractor shall provide full body disposable protective clothing, including head, body, and foot coverings to workers and visitors in sizes adequate to accommodate movement without tearing. Full body disposable protective clothing shall be utilized at all times during lead-related demolition activities.

5. Additional safety equipment (e.g. hard hats meeting the requirements of ANSI Standard Z89.1-1981, eye protection meeting the requirements of ANSI Standard Z87.1-1979, safety shoes meeting the requirements of ANSI Standard Z41.1-1967, disposable gloves), as necessary, shall be furnished to all workers and authorized visitors. This safety equipment shall be utilized at all times during lead-related demolition activities.

6. Non-skid footwear shall be furnished to all workers. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination.

7. Furnish disposable mops, rags, and sponges for Work Area decontamination.

B. Removal:

1. Scaffolds, ladders, lifts, and hand tools (e.g., scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be furnished as needed.

2. Rubber dustpans and rubber squeegees shall be furnished for cleanup.

3. Brushes utilized for removing loose lead-containing materials shall have nylon or fiber bristles. Metal bristles shall not be utilized.

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SUB-SECTION 03 EXECUTION

3.0 EXECUTION

3.1 Lead-Containing Material Removal Preparation

A. Exterior Lead-Related Demolition Work Area Preparation:

1. Prepare a lead work control area by placing a four foot (4') high PVC Safety/Barrier Fence and lead warning tape and proper signage around the area where work will be performed. The PVC Safety/Barrier Fence and warning tape should be placed a sufficient distance away from the removal area to allow persons who are not properly trained or who are not wearing personal protective equipment to avoid the work/contaminated area.
2. Install remote worker decontamination unit described in Section 3.2 or as agreed upon with the Owner's HPM.
3. Lead Workers shall don personal protective equipment as required in Section 2.2.
4. Place one layer of 6-mil polyethylene sheeting on the ground as close as possible to the foundation, or the exterior floors (i.e., deck or porch) when applicable.
5. Extend plastic sheeting a minimum of ten feet (10') out from the foundation.
6. Weight down the polyethylene sheeting at the foundation, and along all edges and seams.
7. The Contractor shall take extra care when performing exterior lead-related demolition on days when the constant wind speed is 15 mile per hour or over. If the removal procedure is producing dry waste in which visible movement along polyethylene sheeting is evident or if dust or debris is present outside of the lead work control area, the Contractor shall change the methods used for dust control to eliminate the problem. In any event, when visible emissions from the work activity are observed crossing the property line/ Work Area perimeter, all removal work will cease immediately. The Contractor will implement emergency dust control measures and work shall not recommence until permission is granted by the HPM.
8. Perform lead removal in accordance with Section 3.6 – Lead-Related Demolition.

B. Interior Lead-Related Demolition Work Area Preparation:

1. Prepare a lead work control area by placing a four foot (4') high PVC Safety/Barrier Fence and lead warning tape and proper signage around the area where work will be performed. The PVC Safety/Barrier Fence and warning tape should be placed a sufficient distance away from the removal area to allow persons who are not properly trained or who are not wearing personal protective equipment to avoid the work/contaminated area.
2. Install remote worker decontamination unit described in Section 3.2 or as agreed upon with the Owner's HPM.
3. Lead Workers shall don personal protective equipment as required in Section 2.2.
4. Place one layer of 6-mil polyethylene sheeting over all critical barriers including HVAC vents, windows, doorways, and corridor openings.
5. Place a drop cloth constructed of one layer of 6-mil polyethylene sheeting in all areas where interior lead-related demolition is to be performed. This drop cloth is to be sized and affixed in such a

manner as to prevent any dust and debris landing on it from escaping. Precautions must be taken to prevent slips, trips and falls of Workers walking on this plastic surface.

6. A pressure differential system may be required, refer to the Scope-of-Work attached and/or consult with the HPM. If required, the pressure differential system shall produce a minimum of four filtered air changes per hour in the contained Work Area (Work Area to include a wood chipper and/or dumpster) and maintains a pressure differential of 0.02-inch water gauge between the inside and outside of the Work Area on a continuous basis.
7. Perform lead-containing material removal in accordance with Section 3.6 – Lead-Related Demolition.

C. Wood Chipper: The following procedures shall be utilized if a wood chipper is proposed to be used by the Contractor:

1. Construct a contained Work Area around the wood chipper and waste dumpster. The contained Work Area shall be constructed of two layers of 6-mil polyethylene sheeting that is mechanically supported.
2. Install worker decontamination unit described in Section 3.2 or as agreed upon with the Owner's HPM.
3. Lead Workers shall don personal protective equipment as required in Section 2.2.
4. A pressure differential system shall be established that produces a minimum of four filtered air changes per hour in the contained Work Area (including the wood chipper and dumpster) and maintains a pressure differential of 0.02-inch water gauge between the inside and outside of the Work Area.
5. Perform lead-containing material removal in accordance with Section 3.6 – Lead-Related Demolition.

3.2 Remote Worker Decontamination Systems

A. A minimum of one (1) three-stage decontamination system is required to be operational on the site at all times that lead-related demolition is being performed. The decontamination system shall comply with the following requirements.

1. Worker decontamination enclosure systems shall be provided at a location near or adjacent to the lead work control areas. As a minimum, one system at a single location is required.
2. Worker decontamination enclosure systems constructed at the Project site shall utilize 6-mil black or opaque polyethylene sheeting, or other approved materials for privacy.
3. The personal decontamination unit shall not be located inside the Work Area unless otherwise authorized by the Owner's HPM.
4. The worker decontamination enclosure system shall consist of at least a clean room, a shower room and an equipment room, each separated from the other and from the Work Area by flaps comprised of three sheets of 6- mil polyethylene sheeting.
5. Clean rooms shall be sized to adequately accommodate the work crew. Space for storing respirators shall be provided in this area. Clean work clothes; clean disposable clothing, replacement filters for respirators, towels and other necessary items shall be provided in adequate supply at the clean room. Posting of notices shall also be in this area or in an area immediately adjacent to the clean room. Postings shall be sited in a manner to ensure line of site visibility prior to approaching/entering the clean room.

6. Shower rooms shall contain at least a Hudson sprayer for washing the workers hands, face, and respirator. The shower enclosure shall be constructed to ensure against leakage of any kind. Shower water shall be drained, collected and either filtered through a system with at least 0.5-1.0 micron particle sizes collection capability or disposed of as contaminated waste. Additionally, the Contractor and their Workers shall make themselves conversant of the requirements of any local water pollution agency or municipal waste water treatment agency prior to discharging any filtered or treated waste water. In no event shall the waste water be discharged without adequate filtration.

3.3 Maintenance of Construction/Lead-Related Work Area Barriers

At any time during the lead related work activities after barriers have been erected, if visible material is observed outside of the Work Area or if damage occurs to barriers, work shall immediately stop, repairs made to barriers, and debris/residue cleaned up using appropriate procedures. In addition, the barriers shall be moved farther away from the lead-related Work Area.

3.4 Commencement of Work Shall Not Occur Until

A. Test Section: Work on the Test Section shall not occur until the following items have been completed.

1. Pre-work submissions, notifications, and permits required and submittals have been provided and approved by the Owner's Representative.
2. Construction and lead work control area barriers are in place.
3. At least one wash station/decontamination station is operational.

B. Interior Work Areas: Work on the interior of the building shall not occur until the following items have been completed.

1. The removal of the asbestos-containing floor tile and mastic has been completed.
2. Results from the interior Test Section have been submitted and the work practices for the interior work have been approved by the Owner's Representative.
3. Construction and lead work control area barriers are in place.
4. At least one wash station/decontamination station is operational.

C. Exterior Work Areas: Work on the exterior of the building shall not occur until the following items have been completed.

1. The interior asbestos-related demolition has been completed.
2. The interior lead-related demolition has been completed.
3. Results from the exterior Test Section have been submitted and the work practices for the exterior work have been approved by the Owner's Representative.
4. Construction and lead work control area barriers are in place.
5. At least one wash station/decontamination station is operational.

D. No work task shall be performed without an initial assessment.

3.5 Workplace Entry and Exit Procedures

A. General:

The following procedures shall be followed prior to entrance into any lead-related Work Area:

1. Workers, before entering the lead-related Work Area, shall read and be familiar with posted regulations, personal protection requirements (including workplace entry and exit procedures), and emergency procedures.
2. Workers shall wear respirators, disposable coveralls, head covering, and foot covering. Hardhats, eye protection, and gloves shall also be utilized, as required. Clean protective clothing shall be provided and utilized by each person for each separate entry into the Work Area.
3. To exit the Work Area, Workers shall proceed to the wash station/decontamination station where they shall remove protective equipment and deposit disposable clothing into appropriately labeled containers for disposal and wash their hands, face, and any other exposed portions of their body.

3.6 Lead-Related Demolition

General - REMOVAL OF LEAD CONTAINING COATINGS

A. Contractor will be required to remove paints and coatings as identified in areas scheduled for demolition. Do not remove lead-containing coatings with a torch or flame, except as an unavoidable result of welding or torching operations.

1. Grinding/Cutting, Welding or Torching Operations: To the extent feasible, and to avoid direct grinding/cutting, welding, or torching on surfaces containing lead in concentrations greater than 0.64 µg/cm2, by manually or chemically removing all layers of the coating to a distance of:
    a. at least four inches (4”) on ALL side from the point at which mechanical abrasion or grinding is proposed,
    b. At least eighteen inches (18”) on ALL side from the point at which heat is proposed to be applied. To prevent the vaporization of lead from the surrounding areas the Contractor shall endeavor to keep these surrounding areas cool.
2. Removal of Surface Coatings with Power Tools: Where mechanical removal of surface coatings constitutes an Activity Level II activity, provide power tools with local HEPA exhaust or dust collection systems to capture the aerosolized lead.
3. Maintain all Work Area surfaces as free as practicable from accumulated dust or debris. Dry sweeping or use of compressed air to remove dust or debris is not permitted. Clean all equipment, tools and containment structures within regulated areas, at a minimum, with HEPA vacuums or wet methods.
4. Conduct operations to prevent injury to adjoining facilities, persons, motor vehicles, etc., as applicable. Prevent chemical cleaning agents from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be injured or damaged by such contact. Do not spray or scrape outdoors during winds of sufficient force to spread cleaning agents to unprotected surfaces.

5. For areas where full abatement is not required, the Contractor shall ensure that the paint that remains on interior walls, ceilings or other area surfaces in areas of active work as applicable shall be adhered to the substrate sufficiently to support eventual repainting. Paints that peel or loosen during wetting will become part of the Scope-of-Work scheduled for abatement.
6. In areas where substrate stabilization is called for, the Contractor shall smoothen the edges from which paint has been removed (i.e., 'feather') and apply at least three (3) coats of a non-lead containing paint primer to the removed substrate plus at least two feet (2') (in every direction) from the edges of the area of partial removal. The primer used for stabilization shall be suitable for application on the specific substrate. NOTE, THIS OPTION IS NOT AVAILABLE FOR IMPACT OR FRICTION SURFACES WHERE ALL LEAD CONTAINING MATERIALS ARE TO BE REMOVED IN THEIR ENTIRETY TO THE SUBSTRATE.
7. In areas where damaged or other asbestos-containing materials will be disturbed during lead paint abatement, the Contractor shall handle this material in accordance with specification Section 02 82 13. Removed asbestos materials shall be placed in two 6-mil disposal bags and fiber drums and disposed of as asbestos waste. Lead and asbestos wastes shall not be combined, where practical. Mixed debris containing both lead and asbestos needs to be disposed at a landfill licensed to accept both types of waste with proper manifests. Only Workers trained, certified and meeting all criteria of both the asbestos abatement specification (Section 02 82 13) and the Lead Abatement Specifications (Section 02 83 00) shall be permitted to attempt any removal that impacts both these materials.
8. Non-paint waste items found on floors are to be separated out and disposed of or cleaned by the Contractor. Small pieces of debris, such as broken glass, paper, etc., may be disposed of with the lead paint. Large items, such as equipment, furnishing, etc., are to be cleaned by HEPA-vacuuming at the same time as the floors and stored on-site as directed by the Owner.
9. Seal all floor openings and protect the floor with polyethylene drop cloths or other acceptable means to prevent contamination or damage to other building surfaces and finishes.
10. Provide HEPA-filtered exhaust units for area ventilation during removal, minimum 1,500-cfm capacity per unit. Provide one unit for each 3,500-sq. ft. of floor space to be covered per workday. Units must be portable and placed in the vicinity of removal operations. Exhaust units outside building. Provide temporary shoring as necessary to support equipment and workers. Establish a minimum of 0.025 inches water gauge negative pressure between the Work Area and the adjacent areas, as applicable, measured at a location approved by EnviroNova.
11. Work Areas may require full or partial scaffolding to allow for continued expiation of the facilities during the construction period. Segregate areas by erecting solid plywood platforms on movable scaffolding and erecting 2 layers of 6-mil polyethylene sheeting to the structure above for full isolation of the assembly.
12. Shoveling, wet sweeping, and brushing may be used only where vacuuming or other equally effective methods have been tried and are found to be ineffective.
13. The use of steam cleaning and compressed air removal methods is not permitted. Abrasive removal equipment shall be equipped with local HEPA exhausts or dust collectors.
14. The use of abrasive mechanical cleaning will generally not be permitted, unless approved in advance by the Owner and EnviroNova; this prohibition includes sanding discs, sand blasting, or other abrasive compounds.
15. Strictly conform to the approved cleaning procedures as recommended by the product manufacturer. Should a modification to the cleaning method specified be proposed, submit the proposal in writing for consideration and review by the Owner and its representative. These

individuals will have the right to ask for test samples before final approval. Any such modification or change shall be at no additional cost to the Owner.

16. Begin cleaning only after all sample panels and other required submissions are approved and protective means and methods are in pace.
17. Where complete removal is required, finished work shall show no signs of stains, scratches, streaks, or runs of discoloration from use of cleaners. Leave all substrate surfaces neat and clean, including removal of all primers as well as surface coats. All surfaces should be uniformly cleaned.

B. Interior Lead-Related Demolition: The Contractor shall utilize the following procedures in addition to those proposed during the Test Sections and in the lead-related demolition work plan required by Section 1.08 when performing lead-related demolition on the interior of the building. Airborne lead concentrations outside the lead work control area but inside of the Work Area shall be kept below 10 $\mu g/m^3$. Airborne lead concentrations outside of the Work Area shall be kept below the background level measured prior to the commencement of construction activities. If the airborne lead concentration outside of the lead work control area exceeds 10 $\mu g/m^3$ or if the airborne lead concentration outside of the Work Area exceeds background levels, then work shall cease and new engineering controls and work procedures shall be utilized.

1. Interior lead-related demolition shall be performed in a manner that reduces the amount of airborne lead particulate generated.
2. While performing manual demolition, the material shall be kept wet to reduce airborne lead concentrations. The material shall only be wetted to a point that dust control is maintained. The Contractor shall take care not to produce runoff or excess water waste. Waste generated during manual demolition shall not be allowed to dry out and shall be quickly packaged and placed into the waste containers required by the waste hauler and landfill.
3. If mechanical methods (power equipment) are used such as saws or grinders, this equipment should be used in a manner that reduces airborne lead concentrations. The area to be cut or ground shall be free of all lead coatings, paints, primers etc. PRIOR to cutting or grinding. The Contractor shall take care not to produce runoff or excess water waste. Waste generated during mechanical demolition shall not be allowed to dry out and shall be quickly packaged and placed into the waste containers required by the waste hauler and the landfill. The equipment shall be decontaminated prior to removing it from the lead work control area.
4. If machinery/open flame is used to perform lead-related demolition, the lead-containing materials shall be pre-wetted and shall be kept continually wet during demolition. The area to be cut or ground shall be free of all lead coatings, paints, primers etc. PRIOR to using mechanical equipment or open flame. The Contractor shall take care not to produce runoff or excess water waste. Waste generated during mechanical/open flame demolition shall be quickly packaged and placed into the waste containers required by the waste hauler and the landfill. The machinery shall be decontaminated prior to removing it from the lead control Work Area.

C. Exterior Lead-Related Demolition: The Contractor shall utilize the following procedures in addition to those proposed during the Test Sections and in the lead-related demolition work plan when performing lead-related demolition on the exterior of the building. Airborne lead concentrations outside the lead work control area but inside of the Work Area shall be kept below 10 $\mu g/m^3$. Airborne lead concentrations outside of the Work Area shall be kept below the background level measured prior to the commencement of construction activities. If the airborne lead concentration outside of the lead work control area exceeds 10 $\mu g/m^3$ or if the airborne lead concentration outside of the Work Area exceeds background levels, then work shall cease and new engineering controls and work procedures shall be utilized.

1. Exterior lead-related demolition shall be performed in a manner that reduces the amount of airborne lead particulate generated.

2. While performing manual demolition, the material shall be kept wet to reduce airborne lead concentrations. The material shall only be wetted to a point that dust control is maintained. The Contractor shall take care not to produce runoff or excess water waste. Waste generated during manual demolition shall not be allowed to dry out and shall be quickly packaged and placed into the waste containers required by the waste hauler and landfill.

3. If mechanical methods (power equipment) are used such as saws or grinders, this equipment should be used in a manner that reduces airborne lead concentrations. The area to be cut or ground shall be free of all lead coatings, paints, primers etc. PRIOR to cutting or grinding. The Contractor shall take care not to produce runoff or excess water waste. Waste generated during mechanical demolition shall not be allowed to dry out and shall be quickly packaged and placed into the waste containers required by the waste hauler and the landfill. The equipment shall be decontaminated prior to removing it from the lead work control area.

4. If machinery/open flame is used to perform lead-related demolition, the lead-containing materials shall be pre-wetted and shall be kept continually wet during demolition. The area to be cut or ground shall be free of all lead coatings, paints, primers etc. PRIOR to using mechanical equipment or open flame. The Contractor shall take care not to produce runoff or excess water waste. Waste generated during mechanical/open flame demolition shall be quickly packaged and placed into the waste containers required by the waste hauler and the landfill. The machinery shall be decontaminated prior to removing it from the lead control Work Area.

3.7 Lead Work Area Clean Up Procedure

A. Maintain surfaces within the lead work control area free of accumulations of lead debris and dust. Restrict the spread of dust and debris. Keep waste from being distributed over the Work Area. Do not dry sweep or use compressed air to clean up the area. When the lead removal operation has been completed, clean the area of visible lead contamination by vacuuming with a HEPA-filtered vacuum cleaner and/or wet mopping the area.

B. Final Cleaning: After all lead-containing materials are removed; the Contractor shall clean any remaining items remaining inside of the building including wall support systems, roof support systems and the concrete slab to remove any "settled" lead dust/debris. The wall and deck support systems shall be wet-wiped using towels, rags, and sponges. The concrete slab shall be HEPA vacuumed and then mopped with plain water. The following procedures shall be used:

1. Wash all surfaces in the Work Area with a solution containing 5 percent tri-sodium phosphate (TSP) or equivalent. Prepare solution using hot water. Workers shall use towels, sponges, and mops to clean all surfaces including all areas that had been covered with polyethylene sheeting. Cleaning shall start at the ceiling and work down to the floors. A new solution of TSP/TSP Substitute and water shall be mixed as the water becomes dark or dirty.

2. The floor will then be re-cleaned with plain water. If required by the Owner or the HPM, the floors could require ‘neutralization’ of any and all chemicals used. If this is to be performed, the neutralization will be carried out after the area has satisfied all clearance criteria.

3.8 Lead-Related Demolition Final Inspection

A. The Owner/HPM will perform a visual inspection of each lead work control area at the completion of each phase of lead-related demolition. The inspection will determine that all lead-containing dust and debris has been cleaned up and that all lead-containing materials have been removed, packaged, and placed into the proper waste containers. If the final visual inspection is not acceptable, the Contractor shall perform the cleanup procedures listed in Section 3.07 above.

B. The Owner/HPM will perform an inspection of the soil surrounding the building. No visible paint chips or lead- containing debris shall be present in the soil. If paint chips or debris are identified in the soil, the Contractor shall remove these using manual methods and HEPA vacuums.

C. Final Inspection: Following completion of all phases of lead-related demolition, the Owner will perform a FINAL visual inspection of any items remaining in the Work Area including wall and deck support systems and the concrete slab.

1. All paint/lead containing waste is to be removed from Work Area by the end of each workday. Accumulated waste will not be allowed to remain in the area overnight. Plastic barriers, at entrances to the Work Areas, shall remain in place at all times until the area is scraped and cleared. Items requiring removal of lead-based paints intact shall be wrapped in one layer of polyethylene sheeting sealed with duct tape and labeled properly prior to removal from the holding area.

2. Visual Clearance Criteria for Lead Only Abatement Areas: At the end of each workday the HPM and the Contractor's Supervisor shall inspect work performed that day. If the visual inspection reveals that lead-contaminated wastes and loose debris have been adequately removed from the area, the Contractor will be allowed to commence work on the next Work Area. If the HPM determines that unacceptable waste and residue remain, the Contractor shall vacuum and re-clean those areas that are unsatisfactory. The Contractor will not be allowed to start removal in the next Work Area until the existing/current Work Area has passed a visual inspection.

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3. Wipe Sample Clearance, as deemed necessary by EnviroNova.

   a. When the work is completed, EnviroNova will visually inspect the zone for any loose dust or debris, followed by wipe sampling of settled dust to document surface lead levels below the specified clearance levels. Samples will be collected using commercial wipes moistened with a non-alcohol wetting agent. A one-foot square area will be wiped twice in an "S" pattern, the second pass being at right angles to the first, folding the wipe inward and placing it in a labeled sample container. The wipe sample will be analyzed by flame atomic absorption using EPA method SW846. The Contractor shall re-clean the work zone if:

      1. the surface concentrations exceed the pre-existing (baseline) levels collected prior to the commencement of work or

      2. the surface concentrations exceed the following levels, <u>whichever of (i) or (ii) listed above is lower:</u>

         40 µg/ft^2.....for floors.
         250 µg/ ft^2.....for interior windowsills and stools.

         400 µg/ft^2.....for window troughs.
         800 µg/ ft^2.....for exterior concrete or other rough surfaces.

         350 ppm…….for soil (or the pre-existing 'baseline' level, whichever is lower).

D. The cleaning and testing will cease only after all required paints are abated and all sample results are below these specified levels. Sample analysis times will be within one (1) workday, unless otherwise indicated.

E. If the above levels enumerated in paragraph 3.a. above are exceeded, the final testing procedure shall then be repeated at Contractor's expense. This shall include, but not be limited to, the sampling and analysis costs for the samples during re-cleaning and the final clearance, EnviroNova's time and expenses, any and all contractual penalties, liquidated damages, etc., levied by the Owner and/or other trades that may be impacted by the change in schedule.

F. Air Sampling Criteria (as applicable): Aggressive air sampling will be conducted for lead simultaneous to the asbestos clearance air sampling. Air samples will be analyzed for total lead in accordance with Lead in Air by Flame AAS NIOSH method 7082. The clearance criterion for lead shall be an airborne concentration below OSHA's "Action Level" of 30 micrograms per cubic meter of lead (30 µg/m^3), on an 8 hour Time Weighted Average (TWA), for all samples.

3.9 Lead Waste Handling Procedures

A. All disposable personal protective equipment, respirator cartridges, and HEPA vacuum filters shall be packaged and disposed of upon completion of the work shift and when the lead removal operation has been completed.

B. All removed lead-containing materials, lead-contaminated clothing and equipment, and lead-containing dust/debris shall be packaged and placed into waste containers approved for use by both the waste transporter and landfill.

C. Properly label each lead waste container in accordance with the requirements of the waste hauler and the landfill. At a minimum, the labels shall identify the type of waste and the date lead-contaminated wastes were first put into the container.

D. The Contractor shall make provisions for the safe storage of waste on site for waste characterization and eventual disposal. For health and safety reasons, waste storage areas must be treated as lead work control areas with restricted access.

3.10 Lead Waste Disposal

A. The Contractor shall perform at their expense, any and all waste characterization and analysis of lead-containing waste or lead-contaminated waste generated during this project. The waste characterization sampling performed on the waste will be in accordance with Title 22.

B. Any and all waste including but not limited to waste generated from abatement projects, demolition debris and/or soil excavation, with total lead content greater than 350 parts per million and scheduled for disposal in California, must be disposed of at a Class I hazardous waste landfill, or at other landfills that have specific permits to accept these wastes. Copies of all waste permits from the waste disposal facility shall be included as a part of the pre-job submittal.

C. For all waste generated from the site one or more of the following characterization tests must be performed:

Total Threshold Limit Concentration (TTLC) *(California State Requirement)*	A. If greater than or equal to 1000 mg/kg the waste must be disposed as a Class I Hazardous Waste, B. If less than 1000 mg/kg but greater than or equal to 50 mg/kg then perform the W.E.T.(STLC) test, C. If less than 50 mg/kg can be disposed of as construction debris
Waste Extraction Test Soluble Threshold Limit Concentration (WET-STLC) *(California State Requirement)*	A. If greater than or equal to 5mg/L the waste must be Disposed as a Class I Hazardous Waste after performing the TCLP Test (Federal) B. If less than 5 mg/L can be disposed of as construction debris.
Toxicity Characteristic Leachate Procedure (TCLP) *(Federally Regulated)*	A. If greater than or equal to 5mg/L the waste must stabilized prior tobeing disposed as a Class I Hazardous Waste B. If less than 5mg/L the waste stabilization is not required. However the material must be disposed as a Class I Hazardous Waste

3.11 OSHA Personal Air Monitoring

A. Air monitoring required by OSHA for lead exposure is work of the Contractor. The Contractor is responsible for providing daily OSHA compliance monitoring as per 29 CFR Part 1926.62 and 8 CCR Part 1532.1.

B. At minimum, Contractor shall conduct representative (25% of crew) breathing zone personal air monitoring of its Workers twice each shift and repeated daily.

C. Monitoring shall be conducted by a qualified professional experienced and knowledgeable about the methods of air monitoring and in accordance with 29 CFR Part 1926.62 and 8 CCR Part 1532.1.

D. Monitoring results and appropriate laboratory analysis work shall be submitted to Owner's Representative within twenty-four (24) hours of the monitoring work.

3.12 Alternate Procedures

A. The procedures described in this section shall be utilized at all times.

B. If specified procedures cannot be utilized, a request shall be made in writing to the Owner providing details of the problem encountered and proposed alternatives.

C. Alternative procedures shall provide equivalent or greater protection than the procedures that they replace.

D. Alternative procedure shall be approved in writing by the Owner and EnviroNova prior to implementation.

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SECTION 02 84 00 POLYCHLORINATED BIPHENYLS (PCB) AND MERCURY TUBES MERCURY SWITCHES REMOVAL

PART 1 GENERAL

1.1 DESCRIPTION

The work of this section consists of furnishing all transportation, labor, materials, equipment and incidentals necessary to legally handle and dispose of offsite all Polychlorinated Biphenyl (PCB) containing materials (fluorescent light ballasts), fluorescent tubes containing mercury vapor, and other hazardous materials.

1.2 SCOPE-OF-WORK

A. The Contractor is responsible for the removal, handling, transport, and proper disposal of PCB-containing materials including fluorescent light ballasts. The Contractor shall inspect remaining fluorescent light fixtures, remove all ballasts which are not marked "Non-PCB containing" or "No PCBs", package, and dispose of in accordance with the requirements identified in this section.

B. The Contractor is responsible for the removal, handling, transport, and disposal of fluorescent tubes containing mercury vapor. Contractor shall remove, package and dispose of all remaining fluorescent light tubes in accordance with the requirements of this section.

1.3 RELATED WORK

1. SECTION 02 82 13–ASBESTOS ABATEMENT WORK
2. SECTION 02 83 00 – LEAD-RELATED DEMOLITION WORK

1.4 APPLICABLE DOCUMENTS AND REGULATIONS

A. It is the responsibility of the Contractor to know the current regulations controlling work and to perform all related work in accordance with such regulations that provide for worker and public safety against asbestos exposure.

B. The publications listed below form a part of this specification to the extent referenced. The current issue of each document shall govern. Where conflict among requirements or with these Specifications exists, the more stringent requirements shall apply.

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 761	Polychlorinated Biphenyl (PCBs) Manufacturing, Processing, Distribution in Commerce and Use Prohibitions
29 CFR 1910.134	Respiratory Protection
29 CFR 1910.145	Accident Prevention Signs and Tags
40 CFR 178	Shipping Container Specification

AMERICAN NATIONAL STANDARD INSTITUTE (ANSI) PUBLICATION

Z88.2-69	Practices for respiratory protection

UNDERWRITERS LABORATORIES, INC.

UL 586 1990	High-Efficiency Particulate Air Filter Units

1.5 DEFINITIONS

A. "Polychlorinated Biphenyls (PCBs)" as used in this specification shall mean the same as PCB Article, PCB Article Container, PCB Container, PCB Equipment, PCB Item, PCB Transformer, PCB Contaminated Transformer, as defined in 40 CFR 716.3.

B. "Leak or leaking" means any instance in which a PCB Article, PCB Container, or PCB Equipment has any PCBs on any portion of its external surface.

C. "Spill" means intentional and unintentional spills, leaks, and other uncontrolled emissions resulting in any quantity of hazardous material being released to the environment.

D. "Control Area" means a restricted area posted with the proper warning/caution signs in which only trained persons may enter.

E. "High Efficiency Particulate Air (HEPA) Filters (for PCB dust)" means a filter capable of removing 99.97% of the particles down to 0.3 microns (□) in diameter and consistent with a UL 586 filter system.

F. "Mercury Filter" means a special mercury filter cartridge carrying proper test and certification approval number for mercury vapor work.

G. "Other Hazardous Materials and Potentially Hazardous Materials" means all hazardous materials or potentially hazardous materials not otherwise defined in this specification as Asbestos, Chlorofluorocarbons (CFCs), Polychlorinated Biphenyls (PCBs), Fluorescent Tubes, Mercury, or Lead Based Paint shall be considered as Other Hazardous Materials and Potentially Hazardous Materials.

H. Hazmat Project Manager (HPM) means the on-site representative from EnviroNova.

1.6 QUALITY ASSURANCE

A. Training: Instruct Workers on the dangers of mercury vapor, PCB, and other hazardous materials exposure, on respirator use, decontamination, and applicable OSHA and EPA regulations.

B. Regulation Documents: Maintain at all times one copy each at the office and one copy each in view at the job site of the approved Contractor's Removal, Storage, and Disposal Work Plan, including addenda and revisions.

C. Access by the Owner, Owners Representative or HPM: The Owner/Owner's Representative/HPM may enter control areas for brief periods of time provided they underwent proper training, donned disposable polyethylene gloves and disposable polyethylene foot covers, as a minimum. Additional protective equipment may be required if respiratory hazard is involved or if skin contact is involved. Contractor shall provide all required personal protective equipment and training for the Owner/Owner's Representative/HPM as required for safe entry and visual inspection in contaminated areas.

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1.7 SUBMITTALS

A. Submit, as applicable, the following to the Owner/Owner's Representative/HPM for approval within 10 days of receiving the Notice to Proceed. These submittals are in addition to those required in Section 02 82 13 or Section 02 83 00. These submittals shall be submitted in accordance with Section 02 84 16:

B. Training Certification of Workers: Submit certificates signed and dated by an officer of the Contractor and by each Worker stating that the Worker has received the required training.

C. Removal, Storage, Packaging, Transportation, and Disposal Work Plan: Submit a Removal, Storage, Packaging, Transportation, and Disposal Work Plan. Submit a detailed job-specific plan of the work procedures to be used in the removal of: fluorescent light bulbs; PCB-containing ballasts, other oils; and mercury containing devices. Include in the plan: eating, drinking, smoking and restroom procedures; leak and spill clean-up; procedures for identifying other hazardous materials and potentially hazardous materials; interface of trades; sequencing of related work; training requirements; respiratory protection requirements; personal protective equipment to be utilized; temporary storage locations; packaging procedures; transportation procedures and disposal sites. Include personal air sampling (if required), sampling methodology, frequency, duration of sampling, and qualifications of personal air monitoring in the air sampling portion of the plan.

D. Upon completion of all removal activities, submit to the Owner and the HPM, documentation that includes the following:

1. The Contractor shall keep records of all documents generated in the course of the work. These include copies of all forms and reports of spills, accidents, personal exposure monitoring, hazardous materials removal logs, and hazardous waste manifests. Copies of all records shall be submitted to the Owner and the HPM at the completion of the work.

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1.8 EQUIPMENT

A. Personal Protective Equipment: Work clothes shall consist of Personal Protection Equipment (PPE) as required by OSHA regulations, including, but not limited to the following:

1. Disposable coveralls;
2. Gloves;
3. Chemical safety goggles;
4. Half-mask cartridge respirator for mercury vapor, PCBs and/or other hazardous material to be used for spills; and
5. Disposable foot covers (polyethylene).

B. Leak/Spill Kit: Assemble a leak/spill kit to include at a minimum, the following items for maximum 200-gallon potential spills. For items where a larger spill potential exists, multiply quantities provided accordingly:

1. Gloves specifically rated for use in handling PCBs (six (6) pairs);
2. Disposable coverall specifically rated for use in handling PCBs (four (4) each);
3. Chemical safety goggles (two (2) each);
4. Disposable foot covers (polyethylene) (six (6) pairs);
5. PCB Caution Sign: “PCB-Spill --- Authorized Personnel Only” (two (2) each);
6. Banner guard or equivalent banner material (100 feet);
7. Absorbent material (five (5) bags);
8. Rags (20 each);
9. HEPA vacuum (one (1) each);
10. Poly lined DOT 17H drums (two (2) each);
11. Blue polyethylene waste bags (five (5) each).

Note: All materials and equipment used to clean up a PCB spill become PCB waste and must be disposed of accordingly.

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PART 2 EXECUTION POLYCHLORINATED BIPHENYLS (PCB) AND MERCURY TUBES MERCURY SWITCHES REMOVAL

2.1 REQUIREMENTS

A. The Contractor shall furnish all labor, materials, and equipment necessary for the complete collection and removal of all PCBs, fluorescent light tubes, ballasts, mercury and other hazardous materials or potentially hazardous materials from the project site.

B. All hazardous materials which are identified as in-scope requirements shall be properly packaged, delivered to, and disposed of at a properly licensed disposal facility. The PCB-containing articles shall be incinerated. The mercury-containing fluorescent tubes shall be recycled.

C. The Contractor shall prepare hazardous waste manifest that will accompany the hazardous materials to the storage site. The Contractor shall ensure that a responsible person from the Owner signs the form. The Contractor is responsible to ensure that the form from point of origin to point of disposal is filled out completely and accurately for complete tracking of hazardous materials. A copy of each hazardous waste manifest shall be submitted to the following:

(Project Name and Address)
EnviroNova
235 Montgomery Street, Suite 1105
San Francisco, CA 94104
415-883-7575 Phone
415-883-7475 Fax

D. The Contractor shall verify that the storage site is capable of accepting the hazardous materials within regulatory compliance prior to delivery of the hazardous materials.

E. Isolate a PCB control area by physical boundaries to prevent unauthorized entry of Workers.

F. Personal Protection: Workers shall wear and use PPE as required in Section 1.8 of this section upon entering a control area.

G. Permissible Exposure Limits (PEL):

1. The PEL for mercury is 0.05 mg/m3 of air based on an 8-hour time weighted average (TWA).
2. The PEL for PCBs is 0.5 mg/m3 based on an 8-hour time weighted average basis.
3. The Contractor shall perform Personal Sampling to ensure the PEL is not exceeded.

2.1.1 Special Hazards

A. Fluorescent light bulbs shall be handled with care during removal and packaging and any breakage shall be reported and the spill cleaned up immediately.

B. Ballasts shall not be exposed to open flames or other high temperature sources since toxic decomposition by-products may be produced.

C. Other hazardous materials or potentially hazardous materials shall be properly identified prior to handling or exposure.

2.1.2 Caution Label

A. Affix labels to all waste containers. Provide label with sufficient print size to be clearly legible, with bold print on a contrasting background, displaying the following:

CAUTION: CONTAINS (*name of hazardous material*)

DATE: SOURCE:

EPA Generator No.

2.1.3 Caution Signage

Per 29 CFR 1910.145, provide signs at approaches to PCB control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area.

2.2 WORK PROCEDURE

A. Establish a control area as specified in paragraph entitled "Control Area". Only personnel briefed on the handling and safety precautions shall be allowed into the area.

B. Work performed in confined spaces shall be performed in accordance with applicable Cal/OSHA requirements.

C. Remove mercury containing bulbs and other devices intact and immediately package for disposal. Handle in a manner that will prevent skin contact.

D. Remove all fluorescent light ballasts that are not marked "Non-PCB containing" or "No PCBs". Place ballasts in DOT approved 17C or 17H drums. Handle PCBs such that no skin contact occurs.

E. Remove all other equipment containing PCBs from site and transport to an approved decontamination facility for final disposal.

F. Removal and off-site disposal of all PCB-containing caulking and adjacent building materials located as PCB bulk product wastes in accordance with 40 CFR 761.62

A. Smoking: Smoking is not permitted within 50 feet (50') of the control area. Provide and post "No Smoking" signs.

B. Work Operations: Ensure that work operations or processes are conducted in accordance with the applicable requirements of this section, including but not limited to:

1. Obtain advance approval of storage sites.
2. Report spills/leaks to the Owner/Owner's Representative/HPM and maintain a record detailing the circumstances surrounding the leak/spill include the location, material leaked/spilled, estimated quantity, cleanup procedure utilized, and disposition of waste.
3. Maintain a spill/leak kit for immediate cleanup of spill/leaks.
4. Maintain an access log of Workers working in a control area and provide a copy to the District's representative upon completion of the operation.

G. Establish a control area as specified in paragraph entitled “Control Area”. Only personnel briefed on the handling and safety precautions shall be allowed into the area.

H. Work performed in confined spaces shall be performed in accordance with applicable Cal/OSHA requirements.

I. Remove mercury containing bulbs and other devices intact and immediately package for disposal. Handle in a manner that will prevent skin contact.

J. Remove all fluorescent light ballasts that are not marked “Non-PCB containing” or “No PCBs”. Place ballasts in DOT approved 17C or 17H drums. Handle PCBs such that no skin contact occurs.

K. Remove all other equipment containing PCBs from site and transport to an approved decontamination facility for final disposal.

2.3 REMEDIATION PLAN

The following sections provide the remediation plan proposed for the clean-up and disposal of each of the identified PCB-containing materials Site Preparation and Controls Prior to initiating the removal of any of the caulking or materials, the following site controls will be implemented:

- A Health & Safety Plan will be developed specific to the work activities. All workers will follow applicable Federal and State regulations regarding the work activities, including but not limited to OSHA regulations, fall protection standards, respiratory protection, ladder/scaffolding safety, personal protective equipment, etc.;
- Polyethylene containment will be constructed enclosing each lobby area prior to work in that area. The use of HEPA filtration will be incorporated to control dust and odors that are generated during the remediation activities (this containment will be maintained during the encapsulant cure time to control odors from the applications, as needed). A decontamination area for personnel and equipment will be erected at the containment exit point;
- Within the containment, a second polyethylene containment will be constructed surrounding each of the removal areas. The use of HEPA filtration will be incorporated to establish negative pressure controls to control dust generated during the removal activities. Wet wiping and water misting will be used as a dust suppressant as appropriate;
- A means of providing ventilation to the containment areas will be established based on the planned project sequencing and access requirements for the elevator lobby areas and library spaces; • Access to the active work areas will be controlled in a manner determined by the contractor to meet project requirements and access needs;
- All powered tools will be equipped with appropriate tool guards and dust/debris collection systems (i.e., HEPA filters). Wet wiping and vacuuming of all tools and equipment in the work area will be performed at the completion of the work activity;
- Air/dust monitoring will be conducted outside of the containment area during the active removal of caulking/concrete. To reduce dust levels and exposures to dust, a combination of engineered controls (e.g., work zone enclosures), equipment equipped with HEPA filters and dust controls, and personal protective equipment (PPE – respirators) will be implemented as part of the work activities.

2.3.2 PCB Impacted Caulking Removal

The following summarizes the activities to be conducted as part of this removal task:

- All work surfaces will be wetted to minimize dust during caulking removal; •
- Caulking will be removed from the joints using a combination of mechanical and physical means.
- All removed caulking and rubber foam backer (if present) will be transported off-site and disposed of in accordance with 40 CFR 761.62 as bulk product waste (see Section 3.2.5).
- Upon the completion of the initial removal activities, the joints will be visually inspected for the presence of any residual caulking. Given that the caulking is visually apparent, this visual inspection will be the primary verification method for the caulking removal. If residual caulking is observed, then any residual caulking will be removed from the adjacent concrete using a combination of mechanical and physical means until the residual caulking has been removed to the maximum extent practical.

2.3.3 PCB Impacted Masonry Scheduled to be Removed

- Masonry material covers the surfaces of the in-fill areas at a thickness of between ½ and 1- inch.
- Analytical data collected to date indicates that PCBs greater than 1 ppm are present in the plaster materials to at least 1 inches of the caulked joints and that PCB impacts to the underlying masonry materials.
- The following summarizes the activities to be conducted as part of the removal of these materials from the locations scheduled for removal:
- All masonry materials in the In-fills scheduled for removal will be removed using mechanical or hand tools to the maximum extent practical and segregated as PCB wastes;
- Masonry materials will be transported off-site and disposed of in accordance with 40 CFR 761.61 as PCB remediation waste (see Section 3.2.5). • The underlying masonry block will not be removed at this time given that the elevator shaft cannot be breached;

2.4 SPILL/LEAK REQUIREMENTS

A. Spills/Leaks: Report any spill/leak to the Owner's Representative immediately.

B. Spill/Leak Control Area: Establish a spill/leak control area and restrict access to properly trained personal utilizing appropriate personal protective equipment.

C. Employee Safety: Contractor shall be responsible for ensuring their Workers are knowledgeable and protected from the health and safety hazards of working with PCBs. The Contractor is advised to follow the guidance promulgated by EPA's Standard Operating Safety Guides (latest edition), the NIOSH, OSHA, USCG, EPA's Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (latest edition) based on 29 CFR 1910.120.

D. Spill/Leak Cleanup Procedures

1. Initiate cleanup of spill/leaks as soon as possible. Immediately transfer broken items into a DOT approved 17H, poly lined drum or other approved container. To clean up spills, the Supervisor shall determine the PPE required to protect Workers in accordance with OSHA. Mop up any liquids with rags or other conventional absorbent. The spent absorbent shall be properly contained and disposed of as solid PCB waste. HEPA vacuum the spill area. HEPA vacuumed waste shall be drummed in a poly lined DOT 17H drum and labeled with a DOT approved caution label.

2. The Contractor shall be responsible for the proper cleanup of all pre-existing or inadvertent spills or leaks. Any leaks shall be immediately stopped, contained, covered, and diked as necessary to facilitate clean-up operations and to prevent the hazardous materials from entering drains, storm sewers, or other water bodies. The Owner shall be immediately notified by a subsequent written report describing the details of the spill or leak, and what actions have been taken to clean-up the spill or leak. The hosing down of any spillage or leaks is prohibited. In the event of a Contractor caused fire involving hazardous materials, the Contractor shall be responsible for the cleanup of any contamination caused by the hazardous, toxic products of combustion.

2.5 STORAGE FOR DISPOSAL

A. Storage Containers

1. Intact fluorescent light bulbs shall be placed in the packaging that is available from the manufacturer.
2. Store non-liquid PCB mixtures, articles, or equipment in DOT Specification 17C or 17H containers.

B. The Contractor shall properly label and mark all hazardous materials and ensure that the vehicle used to transport the hazardous materials is also placarded in accordance with EPA and DOT requirements.

C. Waste Containers: Label waste containers in accordance with the requirements of this section.

D. Temporary Onsite Storage: Obtain written approval for temporary onsite storage from the Owner.

E. Representative/HPM. Temporary onsite storage areas must comply with the following: (1) provide adequate roof and walls to prevent rainwater from reaching the stored material; (2) provide containment curbs to prevent the spread of secondary contamination in the event of a container leak. Hazardous waste shall not be stored on site for longer than regulations allow, but in no case longer than fourteen (14) days or the end of the Contractor's onsite activity – whichever is earlier.

F. The following activities will be completed with regard to the proper storage and disposal of PCB wastes:

G. All PCB containing caulk and foam backer rod (where present) will be designated for disposal as PCB Bulk Product Waste in accordance with 40 CFR 761.62;

H. All PCB impacted building materials removed will be designated for disposal as PCB Remediation Waste in accordance with 40 CFR 761.61;

I. Secure, lined, and covered waste containers (roll-off or equivalent) or 55-gallon DOT-approved steel containers will be staged for the collection of PCB wastes generated during the work activities in accordance with 40 CFR 761.65;

J. Waste materials will be placed in a temporary lined container (cubic yard box, drum, or similar container) at the point of generation and transferred from the containment area to the waste containers along a designated route following the completion of each phase of activity in each elevator lobby (i.e., following caulking and plaster removal and then following encapsulant application);

K. All containers will be properly labeled and marked in accordance with 40 CFR 761.40;

L. Upon completion of the work or when a container is considered full, PCB bulk product wastes and PCB remediation wastes will be transported under manifest off-site for disposal Copies of all

manifests, waste shipment records, and certificates of disposal will be collected and provided as part of the final report to Client.

2.6 CONTROL AREA HOUSEKEEPING

A. Maintain surfaces of the control area free of accumulations of fluorescent light bulb debris, PCBs, and other hazardous materials. Restrict the spread of dust and debris; keep waste from being distributed over Work Area. Do not remove the control area and warning signs prior to the District's representative's approval. Re-clean areas showing residual dust or debris.

END OF SECTION