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THE INDUSTRIAL COMMISSION OF ARIZONA
DIVISION OF OCCUPATIONAL SAFETY & HEALTH



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Consultation Report

For

City of Tucson-Department of Transportation
3920 North Sun Tran Blvd.
Tucson, AZ 85705

Consultation Date
01/31/2017

Request Number
138317

Visit Number
167131

Submitted By

Francisco Mendoza
Consultation, Education & Training
Arizona Division of Occupational Safety and Health
Tucson Office
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1. Executive Summary

This report provides the results of the Initial Health visit requested by City of Tucson and Sun Tran management officials.

VISIT

On January 31, 2017, an Occupational Health visit was conducted at the Sun Tran Bus Maintenance Facility, located at 3920 N. Sun Tran Blvd., in Tucson, Arizona, in response to a request made by both, Mr. Albert Elias, Assistant Manager for the City of Tucson and Mr. Steve Boberg, Facilities Director for Sun Tran. The request asked for an evaluation of the workplace for health issues, more specific, mold problems inside the Northwest Bus Maintenance Facility, Building 5.

Upon arrival at the facility, contact was made with Mr. Boberg and Mr. Elias, as well as Teamsters 104 union representatives, Mr. K.T. Thomas, Mr. Danial Linhart and Mr. Tim Johnson. Other representatives from the City of Tucson and Sun Tran, also participated.

An opening conference was then held with them to explain the scope and purpose of the visit and to reiterate the employer's rights and responsibilities in accepting the consultative services, especially the need to correct any serious/non-serious hazards. It was explained to everyone present that ADOSH does not have a standard for mold at this time, but if a problem does exist, housekeeping issues might be addressed. After the conference, a walk-around survey was performed to identify areas where mold had been an issue in the past.

During the walk-around no visible mold was observed in any of the areas inspected. Arrangements were then made to come back at a later date to collect air samples from these same areas to determine if mold might be present in the air.

After arrangements were made with Mr. Boberg, mold sampling was conducted on February 17, starting at 10:00 am in the morning. A total of 18 samples were collected and submitted to EMSL Analytical, Inc., including one field blank sample.

Results were received from EMSL Analytics on March 6, 2017. Please see "**Appendix A-Industrial Hygiene Monitoring Report**" below for more information about the results.

Note: There were no health hazards identified that involved air monitoring for mold.

On March 27, 2017, at 3:30 p.m., a closing conference was conducted with Mr. Elias, Mr. Boberg, Union 104 representative Tim Johnson, as well as other management officials from Sun Tran, the City of Tucson and Union 104. Mr. Jessie Atencio, Assistant Director for ADOSH Consultation, also participated in the closing conference. At that time results were given to the representative, and discussed. Everyone was then informed that at the time of this evaluation, there were no health hazards identified regarding mold. For more information, please see Appendix A below.

We explained to Mr. Elias and Mr. Boberg, that they would be receiving a detailed report of the survey

findings and encouraged them to take further advantage of ADOSH consultation services, including free training. We concluded the survey, thanked everyone for their participation, reiterated that they could contact us anytime with any questions and exited the facility.

2. Employer's Obligations and Rights

In order to use our services, employers must agree to abide by certain obligations. Employee participation is required on all on-site visits involving hazard identification. Requirements vary depending on whether or not the site has a recognized employee representative. Consultants do not issue citations or propose penalties. The employer must correct imminent danger situations immediately or remove employees from the danger area. Failure to remove employees from an imminent danger area will result in immediate referral to enforcement. The employer must correct all serious hazards; fortunately, none were identified during this visit. Employers, especially those with no hazards, should consider participating in an exemption program like SHARP.

The employer does not have to post the List of Hazards since no hazards were found.

3. Evaluation of Safety and Health Management System

Your safety and health programs were reviewed and discussed during our visit. Appendix B, Safety and Health Program Assessment Worksheet outlines the current status of your safety and health management system based upon your programs, interview of employees, and observations of your workplace.

A safe and healthful workplace depends on an effective management system to ensure that hazards are identified, corrected, and that effective physical and administrative protection are established and maintained.

- **Hazard Anticipation and Detection:** The employer and staff must be able to anticipate and detect hazards. This could be alleviated through training workers, and conducting routine inspections and periodic surveys of the working area. Investigate all accidents and near misses to determine root causes.
 - **Hazard Prevention and Control:** The employer must evaluate working conditions and implement necessary strategies to prevent hazards. Where hazards exist, the employer must utilize engineering, work practice or administrative controls to protect employees from exposure, providing personal protective equipment and clothing. Investigate and analyze work-related incidents and near misses. Provide corrective actions for serious injury, illness conditions, and near misses.
 - **Planning and Evaluation:** Establish a preventive maintenance program and make it available to all employees. Keep employees informed of safety and health activities and conditions. Monitor, evaluate, and communicate hazards, risks, and controls. Develop objectives and an implementation plan for safety and health related issues at the establishment. Plan for periodic review and updates for safety programs. Plan for emergencies by creating an evaluation plan, training employees, and conducting fire drills.
 - **Administration and Supervision:** Record and analyze occupational injuries and illnesses. Recognize employees for safety and healthful work practices. Ensure the development of safety
-

and health program objectives and implementations on a periodic basis and when there are changes to working conditions.

- **Safety and Health Training:** Appropriate safety and health training should be conducted routinely for all employees to include temporary workers to ensure they remain aware of safety and health priorities and consistently utilize the best practices for specific tasks. Provide additional training for new work processes and when accidents and near misses occur. Provide refresher training on a routine basis.
- **Management Leadership:** Commit to employee safety and health and establish lines of communication for safety and health concerns. Authority for such concerns should be clearly defined and communicated. Management should set the example for safety and health behavior by integrating safety and health into business practices. Align safety and health with performance, financial, and recognitions systems. Conduct regular safety and health meetings involving all employees, managers, and supervisors. Recognize employees for safe and healthful work practices. Annually, management should review its safety and health policies and procedures for suitability, adequacy, and effectiveness.
- **Employee Participation:** Follow the safety and health policies and procedures. Be responsible for and participate in safety and health meetings, self-inspections, accident investigation and in developing safety and health work practices.

4. Other Findings and Recommendations

Please see **Appendix A-Industrial Hygiene Monitoring Results** below for information and recommendations.

5. Optional Consultant Comments

Executive Summary/ Narrative Comments	See executive summary above.
Hazard Identified Comments	There were no health hazards identified involving mold at the time of the visit.
Employer Comparison Report(ECR) Comments	No comments.
Evaluation of Safety and Health Management System Comments	Not evaluated.
Training provided by Consultant Comments	Mold issues.
Monitoring Data Comments	Sampling for mold was conducted.
Other Findings Comments	No comments.
Safety and Health Program Assessment Worksheet Comments	No comments.
Other attachments Comments	None.

6. Appendices

Appendix A – Industrial Hygiene Monitoring Results

Mr. Michael Ortega
 City Manager
 City of Tucson
 P.O. Box 27210
 Tucson, Arizona 85726-7210

Dear Mr. Ortega,

On February 17, 2017, the Arizona Division of Occupational Safety and Health (ADOSH) conducted indoor air quality sampling for mold at the Northwest Bus Maintenance Facility, Building 5, located at 3920 N. Sun Tran Blvd., in Tucson Arizona. City of Tucson who owns the building, leases it to Professional Transit Management of Tucson, Inc. dba Sun Tran.

Sampling was conducted using a GRASEBY Anderson high flow air pump model 10-709, serial number 893-1617, with Air-O-Cell sample media. A total of 18 samples, including a field blank, were collected throughout the rooms and areas where mold had been an issue in the past, as per Mr. Steve Boberg, Facilities Director for Sun Tran. The sampling pump was pre- and post-calibrated at 15 liters per minute. The sampling time for each sample collect was 5 minutes to obtain an air volume of 75 liters. Relative humidity throughout the areas where air monitoring was performed was between 21% and 25%. Samples were then submitted to EMSL Analytical for analysis.

SAMPLE NUMBER, LOCATION AND RESULTS ARE AS FOLLOW:

<u>Sample #</u>	<u>LOCATION</u>
ST-1	Outside Bldg. 5-Southside
ST-2	Outside Bldg. 5-Eastside
ST-3	Outside Bldg. 5-Northside
ST-4	Body Shop-Center of room
ST-5	Tire Bay-Northwest area
ST-6	Electric Shop-Center area
ST-7	General Shop-West area
ST-8	Rebuilt Area-North engine
ST-9	Rebuilt Area-Small Components
ST-10	Rebuilt Area-Wash Area
ST-11	Transmission on Rebuilt Area
ST-12	Parts-Downstairs

ST-13	Parts-Upstairs
ST-14	Main Hallway
ST-15	Bay Lift
ST-16	Inside Bus #2504
ST-17	Inside Bus #2748
ST-18-BLK	Field Blank



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 Customer ID: AZSH25A
 Customer PO: E0031859
 Project ID:

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 2675 East Broadway Road
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 Project: Sun Tran

Phone: (602) 542-1667
 Fax:
 Collected: 02/17/2017
 Received: 02/23/2017
 Analyzed: 03/01/2017

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 06-TP-003, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location	371703620-0001			371703620-0002			371703620-0003		
	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total
ST-1 75 Outside Bldg. - South Side				ST-2 75 Outside Bldg. - East Side			ST-3 75 Outside Bldg. - North Side		
Spore Types									
Alternaria	-	-	-	-	-	-	1*	10*	2.3
Ascosporos	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	17*	230*	32.9	-	-	-
Baskidiospores	-	-	-	-	-	-	4	200	45.6
Bipolaris++	-	-	-	1	40	5.7	-	-	-
Chaetomium	-	-	-	1	40	5.7	-	-	-
Cladosporium	2	80	88.9	8	300	42.9	6	200	45.5
Curvularia	-	-	-	-	-	-	1*	10*	2.3
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1*	10*	11.1	1*	10*	1.4	1*	10*	2.3
Filthomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	1*	10*	2.3
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	2	80	11.4	-	-	-
Arthrospores	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Peronospora	-	-	-	-	-	-	-	-	-
Spegazzinia	-	-	-	-	-	-	-	-	-
Total Fungi	3	90	100	30	700	100	14	440	100
Hyphal Fragment	-	-	-	1	40	-	1*	10*	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	1	40	-	3	100	-	1	40	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	2	-	-	3	-

Bipolaris++ = Bipolaris/Drechslera/Exserohilum
 Myxomycetes++ = Myxomycetes/Periconia/Smut

Vincent Iuzzolino
 Vincent Iuzzolino, M.S., Laboratory Manager
 or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. ** Denotes particles found at 300X. * Denotes not detected. Due to method stepping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AHA-LAP, LLC-EMSLAP Lab 100194

Initial report from: 03/02/2017 09:20:59

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 Received: 02/23/2017
 Analyzed: 03/01/2017

Test Report: Atr-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7381)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location	371703620-0004			371703620-0005			371703620-0006		
	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
ST-4 76 Body Shop - Center Of RM									
ST-5 76 Tire Bay - NW Side									
ST-6 76 Electric Shop Center									
Spore Types	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total
Alternaria	-	-	-	1	40	23.5	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	2	80	38.1	-	-	-	-	-	-
Basidiospores	-	-	-	-	-	-	-	-	-
Bipolaris++	-	-	-	1*	10*	5.9	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	3	100	47.8	2	80	47.1	2	80	100
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Genodermia	-	-	-	-	-	-	-	-	-
Myxomycetes++	2*	30*	14.3	-	-	-	-	-	-
Pitheomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Arthrospores	-	-	-	3*	40*	23.5	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Peronospora	-	-	-	-	-	-	-	-	-
Spegazzinia	-	-	-	-	-	-	-	-	-
Total Fungi	7	210	100	7	170	100	2	80	100
Hypheal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	3	100	-	1*	10*	-	-	-	-
Analyt. Sensitivity 800x	-	41	-	-	41	-	-	41	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-6)	-	3	-	-	2	-	-	2	-

Bipolaris++ = Bipolaris/Drechlera/Exserohilum
 Myxomycetes++ = Myxomycetes/Periconia/Smut

Vincent Juzzolino

Vincent Juzzolino, M.S., Laboratory Manager
 or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. --- Denotes particles found at 300X. * = Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL makes no liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

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 Project: Sun Tran

Phone: (602) 542-1657
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 Collected: 02/17/2017
 Received: 02/23/2017
 Analyzed: 03/01/2017

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location	371703620-0007			371703620-0008			371703620-0009		
	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
ST-7 76 General Shop West				ST-8 75 Rebuilt Area - N. Engine			ST-9 75 Rebuilt Area - Small Components		
Spore Types									
Alternaria	1	40	8.3	1*	10*	4.5	1*	10*	5.6
Ascomycetes	1	40	8.3	-	-	-	-	-	-
Aspergillus/Penicillium	2	80	16.7	-	-	-	1	40	22.2
Basidiomycetes	2	80	16.7	-	-	-	-	-	-
Bipolaris**	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	5	200	41.7	4	200	90.9	3	100	55.6
Curvularia	-	-	-	-	-	-	-	-	-
Epilobium	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes**	1	40	8.3	1*	10*	4.5	2*	30*	16.7
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Arthrospores	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Peronospora	-	-	-	-	-	-	-	-	-
Spegazzinia	-	-	-	-	-	-	-	-	-
Total Fungi	12	480	100	6	220	100	7	180	100
Hyphal Fragment	3	100	-	1	40	-	1*	10*	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	1	40	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	2	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	3	-	-	2	-	-	2	-

Bipolaris** = Bipolaris/Drechslera/Exserohilum
 Myxomycetes** = Myxomycetes/Parviconia/Smut

Vincent Juzzolino
 Vincent Juzzolino, M.S., Laboratory Manager
 or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 6 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. ** Denotes particles found at 300X. * Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

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 Tucson, AZ 85716
 Project: Sun Tran

Phone: (602) 542-1657
 Fax:
 Collected: 02/17/2017
 Received: 02/23/2017
 Analyzed: 03/01/2017

Test Report: Air-O-Call™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 06-TP-003, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location	371703620-0010 ST-10 75 Rebuilt Area - Wash Area			371703620-0011 ST-11 75 Transmission On Rebuilt Area			371703620-0012 ST-12 75 Parts - Downstairs		
	Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³
Alternaria	1*	10*	5.3	1*	10*	2.9	1	40	19
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Pericillium	1	40	21.1	2	80	22.0	1	40	19
Basidiospores	1	40	21.1	1	40	11.4	1	40	19
Bipolaris++	-	-	-	1*	10*	2.9	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	3	100	52.6	8	200	57.1	3	40	19
Curvularia	-	-	-	-	-	-	1	40	19
Epibocccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1*	10*	2.9	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopticariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Arthrospores	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	1*	10*	4.0
Peronospora	-	-	-	-	-	-	-	-	-
Spegazzinia	-	-	-	-	-	-	-	-	-
Total Fungi	6	190	100	12	350	100	6	210	100
Hyphal Fragment	1	40	-	6*	80*	-	1	40	-
Insect Fragment	-	-	-	-	-	-	1	40	-
Pollen	-	-	-	3*	40*	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	3	-	-	2	-

Bipolaris++ = Bipolaris/Drochslera/Exaerohilum
 Myxomycetes++ = Myxomycetes/Pericillia/Smut

Vincent Juzzolino, M.S., Laboratory Manager
 or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overabundance of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overexposed samples. Faints are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. --- Denotes particles found at 300X. ** Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL methods are limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AHA-LAP, LLC - EMLAP Lab 100194

Initial report from: 03/02/2017 09:20:59

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com



EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
 Tel/Fax: (800) 220-3675 / (856) 788-0282
 http://www.EMSL.com / cinncrolab@emsl.com

EMSL Order: 371703620
 Customer ID: AZSH25A
 Customer PO: E0031659
 Project ID:

Attn: Francisco Mendoza
 AZ Div. of Occupational Safety & Health
 Industrial Commission of Arizona
 2675 East Broadway Road
 Tucson, AZ 85716
 Project: Sun Tran

Phone: (602) 542-1657
 Fax:
 Collected: 02/17/2017
 Received: 02/23/2017
 Analyzed: 03/01/2017

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location	371703620-0013 ST-13 76 Parts - Upstairs			371703620-0014 ST-14 76 Hallway - Between Return Parts & Eng.			371703620-0015 ST-15 76 XKK Bay Area			
	Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
Alternaria	1*	10*	7.1	-	-	-	-	1*	10*	4
Ascospores	-	-	-	-	-	-	-	2	80	32
Aspergillus/Penicillium	1	40	28.6	-	-	-	-	1	40	16
Basidiospores	-	-	-	1	40	14.3	-	1*	10*	4
Bipolaris++	-	-	-	-	-	-	-	1*	10*	4
Chaetomium	-	-	-	-	-	-	-	-	-	-
Cladosporium	1	40	28.6	4	200	71.4	-	3	100	40
Curvularia	-	-	-	-	-	-	-	-	-	-
Epiloccum	-	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-	-
Myxomycetes++	1*	10*	7.1	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-	-
Torula	-	-	-	1	40	14.3	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-	-
Arthrospores	-	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-	-
Peronospora	1	40	28.6	-	-	-	-	-	-	-
Spegazzinia	-	-	-	-	-	-	-	-	-	-
Total Fungi	5	140	100	6	280	100	-	9	250	100
Hyphal Fragment	1*	10*	-	1	40	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-	-
Pollen	1	40	-	1*	10*	-	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	-	41	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	2	-	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	-	1	-
Background (1-5)	-	2	-	-	1	-	-	-	2	-

Bipolaris++ = Bipolaris/Drechlera/Exserohilum
 Myxomycetes++ = Myxomycetes/Periconia/Smut

Vincent Iuzzolino
 Vincent Iuzzolino, M.S., Laboratory Manager
 or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. *** Denotes particles found at 300X. ** Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AHA-LAP, LLC-EMSL Lab 100194

Initial report from: 03/02/2017 09:20:59



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Attn: Francisco Mendoza Phone: (602) 542-1657
 AZ Div. of Occupational Safety & Health Fax:
 Industrial Commission of Arizona Collected: 02/17/2017
 2875 East Broadway Road Received: 02/23/2017
 Tucson, AZ 85718 Analyzed: 03/01/2017
 Project: Sun Tran

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location	371703620-0016 ST-16 75 Inside Bus #2604			371703620-0017 ST-17 75 Inside Bus #2948			371703620-0018 ST-18 BLK 0 Blank			
	Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
Alternaria	-	-	-	1	40	6.5	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	2	80	44.4	1	40	6.5	-	-	-	-
Basidiospores	-	-	-	-	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-	-
Cladosporium	3	100	55.6	11	460	72.6	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1	40	6.5	-	-	-	-
Phthomyces	-	-	-	1	40	6.5	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-	-
Arthrospores	-	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-	-
Peronospora	-	-	-	-	-	-	-	-	-	-
Spegazzinia	-	-	-	1*	10*	1.6	-	-	-	-
Total Fungi	5	180	100	16	620	100	-	-	No Trace	-
Hypheal Fragment	-	-	-	1	40	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	1*	10*	-	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	0	-	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	0*	-	-
Skin Fragments (1-4)	-	1	-	-	2	-	-	-	-	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	-	-	-
Background (1-5)	-	1	-	-	4	-	-	-	-	-

Bipolaris++ = Bipolaris/Drechslera/Exserohilum
 Myxomycetes++ = Myxomycetes/Pariconia/Smut

Vincent Iuzzolino

Vincent Iuzzolino, M.S., Laboratory Manager
 or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underenumeration. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. ^{***} Details particles found at 300X. * = Denotes not detected. Due to method stopping rates, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AHA-LAP, LLC—EMSL Lab 182194

Initial report from: 03/02/2017 09:20:59

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

FINDINGS: Mold is present as part of the natural environment. Due to air exchange between outdoor and indoor air, mold will typically be found in the indoor atmosphere of buildings. Under normal conditions, indoor mold levels will be less than outdoor levels. The laboratory results above show that the mold concentration for the inside samples were not higher or significantly higher than the three outside samples collected.

During the walk-around of Building 5, there was no visible mold present or water damage found. No odors were present as well. At the present time, there are no OSHA standards for airborne or surface mold exposure that are regulated by ADOSH. If mold concentrations are significantly higher inside the working environment, then ADOSH will look at housekeeping issues where visible mold, moisture and water damage may be an issue. If that were the case, ADOSH would recommend that an ongoing and routine cleaning schedule be followed to eliminate and prevent growth.

RECOMMENDATIONS: As part of routine building maintenance, buildings should be inspected for evidence of water damage and visible mold periodically. The conditions causing mold, such as water leaks, condensation, infiltration, or flooding, should be corrected to prevent mold from growing.

Temperature and Relative Humidity (RH) measurements are often collected as part of an indoor air quality assessment because these parameters affect the perception of comfort indoors. The perception of thermal comfort is related to one's metabolic heat production, the transfer of heat to the environment, physiological adjustments, and body temperature. Heat transfer from the body to the environment is influenced by factors such as temperature, humidity, air movement, personal activities, and clothing. The American National Standards Institute (ANSI)/ASHRAE Standard 22-1002, specifies conditions in which 80% or more of the occupants would be expected to find the environment thermally acceptable. Assuming slow air movement and 50% RH, the operative temperatures recommended by ASHRAE range from 68-74 degrees Fahrenheit in the winter, and from 73-79 degrees Fahrenheit in the summer. The difference between the two is largely due to seasonal clothing selection. ASHRAE recommend Relative Humidity be maintained between 30% and 60% RH. Excessive humidity can support the growth of organisms. **At the time of the sampling, relative humidity ranged from 21% to 25%.**

Heating, ventilation and air conditioning (HVAC) mechanical components can function as reservoirs for microorganisms. This can be a significant problem in HVAC systems where maintenance is inadequate or lacking. The presence of adequate nutrients (dust and debris) and moisture provide an ideal site for fungal amplification. A variety of health disorders can result from microbiological exposure. Hypersensitivity pneumonitis and other respiratory diseases have symptoms which include chest tightness, coughing, muscle aches, chills and fever headache and fatigue.

Administrative and work practice recommendations should include programs that change the behavioral patterns of the building occupants. These administrative and work practices should include preventive maintenance plans for humidifiers, water spray and other HVAC system components. They should include checking damper positions and functioning belts, baffles, ductwork, and system balance. Also measure airflow and perform necessary adjustment if necessary to meet ASHRAE recommendations, include replacing filters on air handling units at regular intervals, clean air distribution ducts and dampers and replace damaged insulation.

Also consider eliminating or controlling all known and potential sources of microbial contaminants by prompt cleanup and repair of all areas where water collection and leakage had occurred, including floors, roofs, HVAC cooling coils, swamp coolers, drain pans, humidifiers containing reservoirs of stagnant water, air washers, fan coil units and filters.

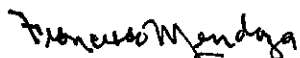
For more information, resources can be found on the Center for Disease Control and Prevention website: <http://www.cdc.gov/mold/cleanup.htm>. In addition, the US EPA Mold Remediation in Schools and Commercial Building-Investigating, *Evaluating and Remediation Moisture and Mold Problems*, also addresses mold evaluations and can help you determine what course of action to take to address any mold problem.

RECORDS RETENTION AND EMPLOYEE NOTIFICATION REQUIREMENTS:

Pursuant to 29 CFR 1910.1020 you are required to make this information available to all affected employees in that work area and retain a copy for a minimum of thirty (30) years.

If you have any questions regarding the above conditions or any other issues related to this visit, please do not hesitate to contact ADOSH at (520) 628-5478.

Sincerely,



Francisco Mendoza
Industrial Hygiene Consultant/CET Supervisor
ADOSH-Tucson Office

Appendix B – Safety and Health Assessment Worksheet

Safety and Health Program Assessment Worksheet

AN EVALUATION WAS NOT CONDUCTED AT THE TIME OF THE VISIT

Appendix C – List of Hazards

This List of Hazards must be posted, unedited, in a prominent place where it is readily observable by all affected employees for three (3) days, or until the hazards are corrected, whichever is later.

VISIT NUMBER: 167131

VISIT DATE(S): 01/31/2017

No hazards were found during this visit at this location.

Appendix D – Survey/Questionnaire

Thank you for taking the time and opportunity to fill-out this form. By completing and sending the form back to us will allow our office to better service companies as your own in the future. We strive to deliver current safety and health information as it relates to the OSHA standards.

Name of Consultant(s): Francisco Mendoza

Visit Date: 2/17/2017

Employer Name: **City of Tucson**

Visit #: 167131

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Neutral</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
The service provided was helpful.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The consultant(s) provided safety and health information necessary to improve our overall program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Opening and Closing conference was fully explained by the Consultant.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The consultant was knowledgeable in the OSHA standards.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What changes, if any, should be made to this service?

How were you aware of our Consultation and Training Services?

Please return via fax or mail. Tucson Fax: (520) 322-8008