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March 23, 2015

Signature on File

TO: Maria Formoso, Principal  
**Miramar High**

FROM: Richard Rosa, Project Manger  
Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment

<u>For Custodial Supervisor Use Only</u>	
<input type="checkbox"/>	Custodial Issues Addressed
<input type="checkbox"/>	Custodial Issues Not Addressed
<hr/>	
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On March 20, 2015, I conducted an assessment at **Miramar High School**. Attached are findings and recommendations for further assessment, remediation, or corrective actions needed.

The IAQ assessment did identify one or more existing conditions impacting IAQ and has generated appropriate work orders to correct deficiencies in systems and maintenance that could contribute to decreased indoor air quality. At the time of the assessment, these concerns were not an immediate health or safety concern to building occupants. However, due to individual sensitivities and predisposing health factors, it is possible that some building occupants may elicit a health response to agents and / or conditions identified during the evaluation. Therefore, to further improve IAQ, prevent development of future IAQ-related problems, and to reduce the potential for IAQ-related complaints by building occupants, the IAQ Assessment Team recommends appropriate follow up of each item identified and listed in the attached evaluation.

*Please ensure that your Head Facilities Serviceperson receives a copy of this correspondence so that the recommendations requiring their attention can be addressed. In an attempt to separate IAQ issues from general maintenance items, the attached assessment may contain direction for site based staff to generate a work order through COMPASS. Within two weeks a representative from the Custodial/Grounds Department will conduct a follow-up visit to ensure that all site based custodial issues have been appropriately addressed.*

Should any questions arise, or if the current concerns continue after the attached recommendations have been addressed, please feel free to contact us at 754-321-1900.

cc: Shelley Meloni, Executive Director, Facilities & Construction  
Mark Dorsett, Manager, Zone 1, Physical Plant Operations Division  
Roy Norton, Manager, Custodial/Grounds, Physical Plant Operations Division  
Aston Henry, Director, Risk Management  
Sonja Coley, Senior Project Manager, Facilities & Construction  
Broward Teachers Union  
Federation of Public Employees

RR/jj  
Enc.

# IAQ Assessment

Miramar High

Evaluation Date

March 20, 2015

Time of Day

12:00 PM

Outdoor Conditions

Temperature

75.1

Relative Humidity

74.5

Ambient CO2

455

Fish	Temperature	Range	Relative Humidity	Range	CO <sup>2</sup>	Range	# Occupants
106	69.9	72 - 78	62.6	30% - 60%	701	MAX 700 > Ambient	
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling		Walls		Floor			
Plaster		Ceramic Tile		Quarry Tile		125 sq ft	
No		Yes		Yes			
No		No		No			
No		No		No			
Ceiling Clean		Walls Clean		Flooring Clean		Room Surfaces Clean	
No		Yes		Yes		Yes	
		HVAC Supply Grills Clean		HVAC Return Grills Clean			
		No		Yes			
		Inside of Supply Duct Clean		Inside of Return Duct Clean			
		No		N/A			
		Ceiling at Supply Grills Clean					
		No					
Trash Removed		Signs of Pests		Room Cluttered		Exhaust Fans Working	
N/A		No		No		Yes	
						Drain Traps Wet	
						No	
						Food if Stored in Room is in Sealed Containers	
						N/A	
						Unapproved Chemicals / Cleaners in Room	
						Air Fresheners in Room	
Mechanical Equipment Location		Filters Installed Properly		Condensate Pan Clean		Mechanical Room Clean	
FISH 107		Yes		N/A		N/A	
		Filters Clean		Cooling Coil Clean		Inside of HVAC Unit Clean	
		Yes		No		N/A	
Fresh Air Intake Location		Pollutant Sources Near Air Intake				Fresh Air Intake Free of Obstruction	
Window unit		No				Yes	

**Observations**

106 is a boys restroom. Custodial staff states they wipe the ceiling down with wexcide and the microbial growth returns.

**Corrective Actions to be Completed by Site Based Staff**

Clean HVAC supply grills with Wexcide	▼
Pour water down drains when not in use	▼
HFSP has wexcided the ceiling and microbial growth re-appears	▼
	▼
	▼
	▼
	▼
	▼

**Corrective Actions to be Completed by PPO**

Evaluate fresh damper in the mechanical room	▼
Set Temperature to 72 - 78 degrees	▼
Repair HVAC to Reduce Humidity Levels	▼
Repair/replace/paint ceiling when HVAC repairs are complete	▼
Evaluate restroom exhaust fan damper for proper operation	▼
	▼
	▼



# IAQ Assessment

Miramar High

Evaluation Date January 9, 2015

Time of Day 1:30 PM

Outdoor Conditions    Temperature 75.6    Relative Humidity 55.3    Ambient CO2 439

Fish	Temperature	Range	Relative Humidity	Range	CO <sup>2</sup>	Range	# Occupants
<span style="border: 1px solid black; padding: 2px;">242</span>	<span style="border: 1px solid black; padding: 2px;">73.5</span>	<span style="border: 1px solid black; padding: 2px;">72 - 78</span>	<span style="border: 1px solid black; padding: 2px;">58.6</span>	<span style="border: 1px solid black; padding: 2px;">30% - 60%</span>	<span style="border: 1px solid black; padding: 2px;">853</span>	<b>MAX 700 &gt; Ambient</b>	<span style="border: 1px solid black; padding: 2px;"> </span>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling		Walls		Floor			
<span style="border: 1px solid black; padding: 2px;">Plaster/2'x4'</span>		<span style="border: 1px solid black; padding: 2px;">Plaster</span>		<span style="border: 1px solid black; padding: 2px;">12" x 12" Vinyl</span>			
<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;">Yes</span>		<span style="border: 1px solid black; padding: 2px;">Yes</span>		<span style="border: 1px solid black; padding: 2px;">&lt;2 sq ft</span>	
<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;"> </span>	
<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;"> </span>	

Ceiling Clean	<span style="border: 1px solid black; padding: 2px;">No</span>	HVAC Supply Grills Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	HVAC Return Grills Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Walls Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Inside of Supply Duct Clean	<span style="border: 1px solid black; padding: 2px;">No</span>	Inside of Return Duct Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Flooring Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Ceiling at Supply Grills Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>		
Room Surfaces Clean	<span style="border: 1px solid black; padding: 2px;">No</span>				

Trash Removed	<span style="border: 1px solid black; padding: 2px;">N/A</span>	Exhaust Fans Working	<span style="border: 1px solid black; padding: 2px;">N/A</span>	Unapproved Chemicals / Cleaners in Room	<span style="border: 1px solid black; padding: 2px;">No</span>
Signs of Pests	<span style="border: 1px solid black; padding: 2px;">No</span>	Drain Traps Wet	<span style="border: 1px solid black; padding: 2px;">N/A</span>	Air Fresheners in Room	<span style="border: 1px solid black; padding: 2px;">No</span>
Room Cluttered	<span style="border: 1px solid black; padding: 2px;">No</span>	Food if Stored in Room is in Sealed Containers	<span style="border: 1px solid black; padding: 2px;">N/A</span>		

Mechanical Equipment Location	<span style="border: 1px solid black; padding: 2px;">Above Ceiling</span>	Mechanical Room Clean	<span style="border: 1px solid black; padding: 2px;">N/A</span>
Filters Installed Properly	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Filters Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Condensate Pan Clean	<span style="border: 1px solid black; padding: 2px;">N/A</span>	Cooling Coil Clean	<span style="border: 1px solid black; padding: 2px;">N/A</span>
		Inside of HVAC Unit Clean	<span style="border: 1px solid black; padding: 2px;">N/A</span>

Fresh Air Intake Location	<span style="border: 1px solid black; padding: 2px;">unknown</span> ▼	Fresh Air Intake Free of Obstruction	<span style="border: 1px solid black; padding: 2px;">N/A</span>
Pollutant Sources Near Air Intake	<span style="border: 1px solid black; padding: 2px;">Not Accessible</span> ▼		

**Observations**

The plaster ceiling in the dome ceiling is clean (Do not disturb plaster in the dome), a 2'x4' ceiling tile has microbial growth and a portion of the plaster ceiling in the soffit needs repair . Granular debris is visible coming from supply vents.

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**Corrective Actions to be Completed by Site Based Staff**

Thoroughly clean horizontal surfaces	▼
	▼
	▼
	▼
	▼
	▼
	▼
	▼

**Corrective Actions to be Completed by PPO**

Clean HVAC supply grills and drops	▼
Evaluate and clean return drop if necessary	▼
Special ceiling tile cuts needed	▼
Repair leak from above drop ceiling HVAC system	▼
Repair water damaged plaster in soffit not the dome	▼
	▼
	▼
	▼

# IAQ Assessment

Miramar High

Evaluation Date

March 20, 2015

Time of Day

10:00 AM

Outdoor Conditions

Temperature

75.1

Relative Humidity

74.5

Ambient CO2

455

Fish	Temperature	Range	Relative Humidity	Range	CO <sup>2</sup>	Range	# Occupants
1384C	73.9	72 - 78	88.7	30% - 60%	516	MAX 700 > Ambient	
Noticeable Odor		<input type="checkbox"/> Yes	Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling	2' X 4' Lay in		<input type="checkbox"/> No		<input type="checkbox"/> No		
Walls	Metal/drywall		<input type="checkbox"/> No		<input type="checkbox"/> No		
Floor	12" x 12" Vinyl		<input type="checkbox"/> No		<input type="checkbox"/> No		
Ceiling Clean		<input type="checkbox"/> Yes	HVAC Supply Grills Clean		<input type="checkbox"/> No	HVAC Return Grills Clean	
Walls Clean		<input type="checkbox"/> No	Inside of Supply Duct Clean		<input type="checkbox"/> Yes	Inside of Return Duct Clean	
Flooring Clean		<input type="checkbox"/> No	Ceiling at Supply Grills Clean		<input type="checkbox"/> Yes		
Room Surfaces Clean		<input type="checkbox"/> No					
Trash Removed		<input type="checkbox"/> Yes	Exhaust Fans Working		<input type="checkbox"/> No	Unapproved Chemicals / Cleaners in Room	
Signs of Pests		<input type="checkbox"/> No	Drain Traps Wet		<input type="checkbox"/> N/A	Air Fresheners in Room	
Room Cluttered		<input type="checkbox"/> No	Food if Stored in Room is in Sealed Containers		<input type="checkbox"/> N/A		
Mechanical Equipment Location			Bard like HVAC system in classroom			Mechanical Room Clean	
Filters Installed Properly		<input type="checkbox"/> N/A	Filters Clean		<input type="checkbox"/> N/A	Inside of HVAC Unit Clean	
Condensate Pan Clean		<input type="checkbox"/> N/A	Cooling Coil Clean		<input type="checkbox"/> N/A		
Fresh Air Intake Location			Behind Bard unit/Exterior wall			Fresh Air Intake Free of Obstruction	
Pollutant Sources Near Air Intake			No			<input type="checkbox"/> Yes	

**Observations**

1384C is a portable

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**Corrective Actions to be Completed by Site Based Staff**

Clean dust from wall surfaces	▼
Floor needs sweeping in tight spots	▼
Clean dust buildup on horizontal surfaces	▼
Vacuum/wipe return grill	▼
Clean HVAC supply grills with Wexcide	▼
	▼
	▼
	▼

**Corrective Actions to be Completed by PPO**

Repair HVAC to Reduce Humidity Levels	▼
Evaluate the cleaning of the HVAC coil	▼
Check the HVAC compressor for normal operation	▼
HVAC fan appeared to be running without compressor	▼
Repair the restroom exhaust fan	▼
	▼
	▼