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July 13, 2005

TO: Ms. Vera Groover, Principal  
**Endeavor Primary Learning Center**

FROM: Robert J. Krickovich, Coordinator, LEA  
Facilities and Construction Management, Environmental Division

SUBJECT: Indoor Air Quality (IAQ) Assessment  
FISH 112, 114, 115, 116, 118, 119, 120, 121, 122, 123 and 124

On July 1, 2005 the IAQ Assessment Team conducted an assessment of FISH 112, 114, 115, 116, 118, 119, 120, 121, 122, 123 and 124 at **Endeavor Primary Learning Center**. The evaluation consisted of a walkthrough of the identified areas to assess the current condition of the location with regard to indoor air quality. This assessment included observations of the carpet, floor tile, ceiling tile, interior walls, false ceiling plenum, and accessible ventilation equipment.

Attached are the findings of this assessment along with recommendations for further assessment, remediation, or corrective actions, if needed.

The IAQ Assessment did identify conditions in the building significantly impacting IAQ, which could present health and safety concerns to building occupants. 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. In addition, water damaged drywall was found on the exterior walls of FISH 111, 112, 116 and 119. The water damaged drywall has been removed and is in the process of being replaced.

Should any questions arise, or if the current concerns continue after the attached recommendations have been addressed, please feel free to contact me at 754-321-1638.

cc: Dr. Harry LaCava, Area Superintendent  
Fran Bolden, Area Director  
Jeffrey S. Moquin, Director, Risk Management  
Israel Rodriguez-Soto, Project Manager II, Facilities and Construction Management  
Gary Itzkowitz, Broward Teachers Union  
Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1  
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division

RK/tc  
Enc.

# IAQ Assessment

Endeavor Primary Learning Center

Evaluation Requested

Time of Day

Evaluation Date

Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="112"/>	<input type="text"/>	<input type="text" value="72 - 78"/>	<input type="text"/>	<input type="text" value="30% - 60%"/>	<input type="text"/>	<input type="text" value="Max 700 &gt; Ambient"/>	<input type="text" value="4"/>
Noticeable Odor		<input type="text" value="No"/>	Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling Type	<input type="text" value="2 x 2 Lay In"/>	<input type="text" value="Yes"/>	<input type="text" value="No"/>		<input type="text" value="None"/>		
Wall Type	<input type="text" value="Drywall"/>	<input type="text" value="No"/>	<input type="text" value="No"/>		<input type="text" value="Exterior Wall Water Damaged"/>		
Flooring	<input type="text" value="12 x 12 Vinyl"/>	<input type="text" value="No"/>	<input type="text" value="No"/>		<input type="text" value="None"/>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Walls	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Flooring	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Return Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
Ceiling at Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Surfaces in Room	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>

## Observations

### Findings:

- Water damaged drywall removed by the Environmental Department of Facilities
- Exterior wall has 80% moisture content between windows. Roof drain is located near water damaged area.
- Dust and debris on HVAC return grills

### Recommendations:

#### Site Based Maintenance:

- Clean HVAC return grills with Wexcide disinfectant solution
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

#### Physical Plant Operations Division:

- Replace water damaged drywall removed by the Environmental Department of Facilities

#### Project Manager:

- Investigate cause of water damage and initiate repairs to roof, drainage and building exterior to prevent water intrusion into buildings.

# IAQ Assessment

Endeavor Primary Learning Center

Evaluation Requested June 30, 2005

Time of Day 10:45 am

Evaluation Date July 1, 2005

Outdoor Conditions      Temperature 85.6      Relative Humidity 75.6      Ambient CO2 443

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<span style="border: 1px solid black; padding: 2px;">114</span>	<span style="border: 1px solid black; padding: 2px;">72.5</span>	<span style="border: 1px solid black; padding: 2px;">72 - 78</span>	<span style="border: 1px solid black; padding: 2px;">75.9</span>	<span style="border: 1px solid black; padding: 2px;">30% - 60%</span>	<span style="border: 1px solid black; padding: 2px;">453</span>	<span style="border: 1px solid black; padding: 2px;">Max 700 &gt; Ambient</span>	<span style="border: 1px solid black; padding: 2px;">4</span>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<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;">Entire Room</span>	
Ceiling Type	<span style="border: 1px solid black; padding: 2px;">2 x 2 Lay In</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;">Entire Room</span>		
Wall Type	<span style="border: 1px solid black; padding: 2px;">Drywall</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;">North Wall and Above Ceilings</span>		
Flooring	<span style="border: 1px solid black; padding: 2px;">12 x 12 Vinyl</span>		<span style="border: 1px solid black; padding: 2px;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">Water from sweating duct</span>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<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;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">Remove all water damaged/stained ceiling tiles</span>
Walls	<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;">Clean with Wexcide disinfectant</span>
Flooring	<span style="border: 1px solid black; padding: 2px;">Yes</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>
HVAC Supply Grills	<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;">Clean with Wexcide disinfectant</span>
HVAC Return Grills	<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;">Clean with Wexcide disinfectant</span>
Ceiling at Supply Grills	<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;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">Replace water damaged ceilings at supply grills</span>
Surfaces in Room	<span style="border: 1px solid black; padding: 2px;">Yes</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>

## Observations

<p><b>Findings:</b></p> <ul style="list-style-type: none"> <li>- Visible signs of microbial growth on walls and ceiling tiles</li> <li>- Duct work above ceiling is sweating and water is dripping on ceiling tiles and floor</li> <li>- Water damaged drywall removed by the Environmental Department of Facilities</li> <li>- HVAC chiller is set to automatic and air handlers in bypass -- running 24/7. Humidity level elevated.</li> <li>- Dust and debris on HVAC supply and return grills</li> </ul> <p><b>Recommendations:</b></p> <p><b>Site Based Maintenance:</b></p> <ul style="list-style-type: none"> <li>- Clean HVAC supply and return grills with Wexcide disinfectant solution</li> <li>- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate</li> </ul> <p><b>Physical Plant Operations Division:</b></p> <ul style="list-style-type: none"> <li>- Evaluate and repair HVAC duct insulation and replace stained ceiling tiles</li> <li>- Clean drywall above ceiling and treat with anti-microbial</li> <li>- Replace water damaged drywall removed by the Environmental Department of Facilities</li> <li>- Reset all HVAC operations to automatic and evaluate and repair HVAC system to lower humidity level</li> </ul> <p><b>Project Manager:</b></p> <ul style="list-style-type: none"> <li>- Provide Test and Balance of HVAC system and reset to automatic operation. Ensure that system is operating as designed for de-humidification of building.</li> </ul>
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# IAQ Assessment

Endeavor Primary Learning Center

Evaluation Requested June 30, 2005

Time of Day 10:45 am

Evaluation Date July 1, 2005

Outdoor Conditions      Temperature 85.6      Relative Humidity 75.6      Ambient CO2 443

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<span style="border: 1px solid black; padding: 2px;">115</span>	<span style="border: 1px solid black; padding: 2px;">72.2</span>	<span style="border: 1px solid black; padding: 2px;">72 - 78</span>	<span style="border: 1px solid black; padding: 2px;">77.2</span>	<span style="border: 1px solid black; padding: 2px;">30% - 60%</span>	<span style="border: 1px solid black; padding: 2px;">447</span>	<span style="border: 1px solid black; padding: 2px;">Max 700 &gt; Ambient</span>	<span style="border: 1px solid black; padding: 2px;">4</span>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<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;">29 Removed - 13 Visible Growth</span>	
Ceiling Type	<span style="border: 1px solid black; padding: 2px;">2 x 2 Lay In</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;">Above Ceilings</span>		
Wall Type	<span style="border: 1px solid black; padding: 2px;">Drywall</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;">Water from sweating duct</span>		
Flooring	<span style="border: 1px solid black; padding: 2px;">12 x 12 Vinyl</span>		<span style="border: 1px solid black; padding: 2px;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">No</span>			

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<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;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">Remove all water damaged/stained ceiling tiles</span>
Walls	<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;">Clean with Wexcide disinfectant</span>
Flooring	<span style="border: 1px solid black; padding: 2px;">Yes</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>
HVAC Supply Grills	<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;">Clean with Wexcide disinfectant</span>
HVAC Return Grills	<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;">Clean with Wexcide disinfectant</span>
Ceiling at Supply Grills	<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;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">Replace water damaged ceilings at supply grills</span>
Surfaces in Room	<span style="border: 1px solid black; padding: 2px;">Yes</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>

## Observations

### Findings:

- Visible signs of microbial growth on walls and ceiling tiles
- Duct work above ceiling is sweating and water is dripping on ceiling tiles and floor
- HVAC chiller is set to automatic and air handlers in bypass -- running 24/7. Humidity level elevated.
- Dust and debris on HVAC supply and return grills

### Recommendations:

#### Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

#### Physical Plant Operations Division:

- Evaluate and repair HVAC duct insulation and replace stained ceiling tiles
- Clean drywall above ceiling and treat with anti-microbial
- Reset all HVAC operations to automatic and evaluate and repair HVAC system to lower humidity level

#### Project Manager:

- Provide Test and Balance of HVAC system and reset to automatic operation. Ensure that system is operating as designed for de-humidification of building.

# IAQ Assessment

Endeavor Primary Learning Center

Evaluation Requested June 30, 2005

Time of Day 10:45 am

Evaluation Date July 1, 2005

Outdoor Conditions      Temperature 85.6      Relative Humidity 75.6      Ambient CO2 443

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<span style="border: 1px solid black; padding: 2px;">116</span>	<span style="border: 1px solid black; padding: 2px;"></span>	<span style="border: 1px solid black; padding: 2px;">72 - 78</span>	<span style="border: 1px solid black; padding: 2px;"></span>	<span style="border: 1px solid black; padding: 2px;">30% - 60%</span>	<span style="border: 1px solid black; padding: 2px;"></span>	<span style="border: 1px solid black; padding: 2px;">Max 700 &gt; Ambient</span>	<span style="border: 1px solid black; padding: 2px;">4</span>
Noticeable Odor	<span style="border: 1px solid black; padding: 2px;">No</span>		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	<span style="border: 1px solid black; padding: 2px;">2 x 2 Lay In</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;">Entire Room</span>		
Wall Type	<span style="border: 1px solid black; padding: 2px;">Drywall</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;">North Wall and Above Ceilings</span>		
Flooring	<span style="border: 1px solid black; padding: 2px;">12 x 12 Vinyl</span>		<span style="border: 1px solid black; padding: 2px;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">Water from sweating duct</span>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<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;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">Remove all water damaged/stained ceiling tiles</span>
Walls	<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;">Clean with Wexcide disinfectant</span>
Flooring	<span style="border: 1px solid black; padding: 2px;">Yes</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>
HVAC Supply Grills	<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;">Clean with Wexcide disinfectant</span>
HVAC Return Grills	<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;">Clean with Wexcide disinfectant</span>
Ceiling at Supply Grills	<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;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">Replace water damaged ceilings at supply grills</span>
Surfaces in Room	<span style="border: 1px solid black; padding: 2px;">Yes</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>

## Observations

### Findings:

- Visible signs of microbial growth on walls and ceiling tiles
- Duct work above ceiling is sweating and water is dripping on ceiling tiles and floor
- Water damaged drywall removed by the Environmental Department of Facilities
- Exterior wall has 80% moisture content between windows. Roof drain is located near water damaged area.
- HVAC chiller is set to automatic and air handlers in bypass -- running 24/7. Humidity level elevated.
- Dust and debris on HVAC supply and return grills

### Recommendations:

#### Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

#### Physical Plant Operations Division:

- Evaluate and repair HVAC duct insulation and replace stained ceiling tiles
- Clean drywall above ceiling and treat with anti-microbial
- Replace water damaged drywall removed by the Environmental Department of Facilities
- Reset all HVAC operations to automatic and evaluate and repair HVAC system to lower humidity level

#### Project Manager:

- Provide Test and Balance of HVAC system and reset to automatic operation. Ensure that system is operating as designed for de-humidification of building.
- Investigate cause of water damage and initiate repairs to roof, drainage and building exterior to prevent water intrusion into buildings.

# IAQ AHU Assessment

Endeavor Primary Learning Center

Evaluation Requested

Time of Day

Evaluation Date

Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

<b>AHU Room #</b>	<b>Temperature</b>	<b>Range</b>	<b>Relative Humidity</b>	<b>Range</b>	<b>CO2</b>	<b>Range</b>
<input type="text" value="118"/>	<input type="text" value="73.5"/>	<input type="text" value="72 - 78"/>	<input type="text" value="82"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="466"/>	<input 1,000="" ppm)"="" type="text" value("&lt;=""/>
<b>Noticeable Odor</b>	<input type="text" value="Yes"/>	<b>Visible water damage / staining?</b>	<b>Visible microbial growth?</b>	<b>Amount of material affected</b>		
<b>Ceiling Type</b>	<input type="text" value="Metal Deck"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
<b>Wall Type</b>	<input type="text" value="Drywall"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
<b>Flooring</b>	<input type="text" value="Concrete"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
	<b>Clean</b>	<b>Minor Dust / Debris</b>	<b>Needs Cleaning</b>	<b>Corrective Action Required</b>		
<b>Room</b>	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text"/>		
<b>Filters</b>	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Replace Filters"/>		
<b>Coil</b>	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		
<b>Pan</b>	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		
<b>Duct</b>	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		
<b>Motorized Damper Installed</b>	<input type="text" value="Yes"/>	<input type="text"/>				
<b>Damper Open / Operating</b>	<input type="text" value="Yes"/>	<input type="text"/>				
<b>Fresh Air Intake Un-obstructed</b>	<input type="text" value="Yes"/>	<input type="text"/>				
<b>Pollutant Sources Near Air Intake</b>	<input type="text" value="No"/>	<input type="text"/>				
<b>AHU Supply Water Temp</b>	<input type="text" value="Unknown"/>	<b>AHU Return Water Temp</b>	<input type="text" value="Unknown"/>			

**Observations**

**Findings:**

- Filters installed are fiberglass mesh 1 1/2" thick stacked on top of each other and show major dust and debris
- Visible microbial growth on chilled water pipe insulation
- Pressure and temperature gauges on the unit are not operational
- Dust and debris throughout the room

**Recommendations:**

**Site Based Maintenance:**

- Install proper filters - 4" thick pleated filters
- Change filters at regular intervals
- Clean dust and debris from room

**Physical Plant Operations Division:**

- Clean chilled water pipe insulation and treat with anti-microbial

**Project Manager:**

- Investigate cause of microbial growth on chilled water pipe insulation with contractor/consultant and repair as necessary.
- Have all pressure gauges and thermometers replaced.

# IAQ Assessment

Endeavor Primary Learning Center

Evaluation Requested June 30, 2005

Time of Day 10:45 am

Evaluation Date July 1, 2005

Outdoor Conditions      Temperature 85.6      Relative Humidity 75.6      Ambient CO2 443

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
119		72 - 78		30% - 60%		Max 700 > Ambient	4
Noticeable Odor	No		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	2 x 2 Lay In		Yes	Yes	Entire Room		
Wall Type	Drywall		Yes	Yes	North Wall and Above Ceilings		
Flooring	12 x 12 Vinyl		Yes	No	Water from sweating duct		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	No	Yes	Remove all water damaged/stained ceiling tiles
Walls	No	Yes	Yes	Clean with Wexcide disinfectant
Flooring	Yes	No	No	
HVAC Supply Grills	No	Yes	Yes	Clean with Wexcide disinfectant
HVAC Return Grills	No	Yes	Yes	Clean with Wexcide disinfectant
Ceiling at Supply Grills	No	No	Yes	Replace water damaged ceilings at supply grills
Surfaces in Room	Yes	No	No	

## Observations

**Findings:**

- Visible signs of microbial growth on walls and ceiling tiles
- Duct work above ceiling is sweating and water is dripping on ceiling tiles and floor
- Water damaged drywall removed by the Environmental Department of Facilities
- Exterior wall has 80% moisture content between windows. Roof drain is located near water damaged area.
- HVAC chiller is set to automatic and air handlers in bypass -- running 24/7. Humidity level elevated.
- Dust and debris on HVAC supply and return grills

**Recommendations:**

**Site Based Maintenance:**

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

**Physical Plant Operations Division:**

- Evaluate and repair HVAC duct insulation and replace stained ceiling tiles
- Clean drywall above ceiling and treat with anti-microbial
- Replace water damaged drywall removed by the Environmental Department of Facilities
- Reset all HVAC operations to automatic and evaluate and repair HVAC system to lower humidity level

**Project Manager:**

- Provide Test and Balance of HVAC system and reset to automatic operation. Ensure that system is operating as designed for de-humidification of building.
- Investigate cause of water damage and initiate repairs to roof, drainage and building exterior to prevent water intrusion into buildings.

# IAQ Assessment

Endeavor Primary Learning Center

Evaluation Requested June 30, 2005

Time of Day 10:45 am

Evaluation Date July 1, 2005

Outdoor Conditions      Temperature 85.6      Relative Humidity 75.6      Ambient CO2 443

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
120		72 - 78		30% - 60%		Max 700 > Ambient	4
Noticeable Odor	No		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	2 x 2 Lay In		Yes	Yes	Entire Room		
Wall Type	Drywall		Yes	Yes	Above Ceilings		
Flooring	12 x 12 Vinyl		Yes	No	Water from sweating duct		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	No	Yes	Remove all water damaged/stained ceiling tiles
Walls	No	Yes	Yes	Clean with Wexcide disinfectant
Flooring	Yes	No	No	
HVAC Supply Grills	No	Yes	Yes	Clean with Wexcide disinfectant
HVAC Return Grills	No	Yes	Yes	Clean with Wexcide disinfectant
Ceiling at Supply Grills	No	No	Yes	Replace water damaged ceilings at supply grills
Surfaces in Room	Yes	No	No	

## Observations

### Findings:

- Visible signs of microbial growth on walls and ceiling tiles
- Duct work above ceiling is sweating and water is dripping on ceiling tiles and floor
- HVAC chiller is set to automatic and air handlers in bypass -- running 24/7
- Dust and debris on HVAC supply and return grills

### Recommendations:

#### Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

#### Physical Plant Operations Division:

- Evaluate and repair HVAC duct insulation and replace stained ceiling tiles
- Clean drywall above ceiling and treat with anti-microbial
- Reset all HVAC operations to automatic and evaluate and repair HVAC system to lower humidity level

#### Project Manager:

- Provide Test and Balance of HVAC system and reset to automatic operation. Ensure that system is operating as designed for de-humidification of building.



# IAQ Assessment

Endeavor Primary Learning Center

Evaluation Requested June 30, 2005

Time of Day 10:45 am

Evaluation Date July 1, 2005

Outdoor Conditions      Temperature 85.6      Relative Humidity 75.6      Ambient CO2 443

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<span style="border: 1px solid black; padding: 2px;">121</span>	<span style="border: 1px solid black; padding: 2px;">72.5</span>	<span style="border: 1px solid black; padding: 2px;">72 - 78</span>	<span style="border: 1px solid black; padding: 2px;">75.9</span>	<span style="border: 1px solid black; padding: 2px;">30% - 60%</span>	<span style="border: 1px solid black; padding: 2px;">453</span>	<span style="border: 1px solid black; padding: 2px;">Max 700 &gt; Ambient</span>	<span style="border: 1px solid black; padding: 2px;">4</span>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<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;">Entire Room</span>	
Ceiling Type	<span style="border: 1px solid black; padding: 2px;">2 x 2 Lay In</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;">Entire Room</span>		
Wall Type	<span style="border: 1px solid black; padding: 2px;">Drywall</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;">North Wall and Above Ceilings</span>		
Flooring	<span style="border: 1px solid black; padding: 2px;">12 x 12 Vinyl</span>		<span style="border: 1px solid black; padding: 2px;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">Water from sweating duct</span>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<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;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">Remove all water damaged/stained ceiling tiles</span>
Walls	<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;">Clean with Wexcide disinfectant</span>
Flooring	<span style="border: 1px solid black; padding: 2px;">Yes</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>
HVAC Supply Grills	<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;">Clean with Wexcide disinfectant</span>
HVAC Return Grills	<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;">Clean with Wexcide disinfectant</span>
Ceiling at Supply Grills	<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;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">Replace water damaged ceilings at supply grills</span>
Surfaces in Room	<span style="border: 1px solid black; padding: 2px;">Yes</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>

## Observations

### Findings:

- Visible signs of microbial growth on walls and ceiling tiles
- Duct work above ceiling is sweating and water is dripping on ceiling tiles and floor
- Water damaged drywall removed by the Environmental Department of Facilities
- HVAC chiller is set to automatic and air handlers in bypass -- running 24/7. Humidity level elevated.
- Dust and debris on HVAC supply and return grills

### Recommendations:

#### Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

#### Physical Plant Operations Division:

- Evaluate and repair HVAC duct insulation and replace stained ceiling tiles
- Clean drywall above ceiling and treat with anti-microbial
- Replace water damaged drywall removed by the Environmental Department of Facilities
- Reset all HVAC operations to automatic and evaluate and repair HVAC system to lower humidity level

#### Project Manager:

- Provide Test and Balance of HVAC system and reset to automatic operation. Ensure that system is operating as designed for de-humidification of building.

# IAQ Assessment

Endeavor Primary Learning Center

Evaluation Requested

Time of Day

Evaluation Date

Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="122"/>	<input type="text"/>	<input type="text" value="72 - 78"/>	<input type="text"/>	<input type="text" value="30% - 60%"/>	<input type="text"/>	<input type="text" value="Max 700 &gt; Ambient"/>	<input type="text" value="4"/>
Noticeable Odor		<input type="text" value="No"/>	Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling Type	<input type="text" value="2 x 2 Lay In"/>		<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Entire Room"/>		
Wall Type	<input type="text" value="Drywall"/>		<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Above Ceilings"/>		
Flooring	<input type="text" value="12 x 12 Vinyl"/>		<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="Water from sweating duct"/>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove all water damaged/stained ceiling tiles"/>
Walls	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
Flooring	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Supply Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
HVAC Return Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
Ceiling at Supply Grills	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Replace water damaged ceilings at supply grills"/>
Surfaces in Room	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>

## Observations

### Findings:

- Visible signs of microbial growth on walls and ceiling tiles
- Duct work above ceiling is sweating and water is dripping on ceiling tiles and floor
- HVAC chiller is set to automatic and air handlers in bypass -- running 24/7
- Dust and debris on HVAC supply and return grills

### Recommendations:

#### Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

#### Physical Plant Operations Division:

- Evaluate and repair HVAC duct insulation and replace stained ceiling tiles
- Clean drywall above ceiling and treat with anti-microbial
- Reset all HVAC operations to automatic and evaluate and repair HVAC system to lower humidity level

#### Project Manager:

- Provide Test and Balance of HVAC system and reset to automatic operation. Ensure that system is operating as designed for de-humidification of building.

# IAQ Assessment

Endeavor Primary Learning Center

Evaluation Requested

Time of Day

Evaluation Date

Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="123"/>	<input type="text"/>	<input type="text" value="72 - 78"/>	<input type="text"/>	<input type="text" value="30% - 60%"/>	<input type="text"/>	<input type="text" value="Max 700 &gt; Ambient"/>	<input type="text" value="4"/>
Noticeable Odor		<input type="text" value="No"/>	Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling Type	<input type="text" value="2 x 2 Lay In"/>		<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Entire Room"/>		
Wall Type	<input type="text" value="Drywall"/>		<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Above Ceilings"/>		
Flooring	<input type="text" value="12 x 12 Vinyl"/>		<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="Water from sweating duct"/>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove all water damaged/stained ceiling tiles"/>
Walls	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
Flooring	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Supply Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
HVAC Return Grills	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean with Wexcide disinfectant"/>
Ceiling at Supply Grills	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Replace water damaged ceilings at supply grills"/>
Surfaces in Room	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>

## Observations

### Findings:

- Visible signs of microbial growth on walls and ceiling tiles
- Duct work above ceiling is sweating and water is dripping on ceiling tiles and floor
- HVAC chiller is set to automatic and air handlers in bypass -- running 24/7
- Dust and debris on HVAC supply and return grills

### Recommendations:

#### Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

#### Physical Plant Operations Division:

- Evaluate and repair HVAC duct insulation and replace stained ceiling tiles
- Clean drywall above ceiling and treat with anti-microbial
- Reset all HVAC operations to automatic and evaluate and repair HVAC system to lower humidity level

#### Project Manager:

- Provide Test and Balance of HVAC system and reset to automatic operation. Ensure that system is operating as designed for de-humidification of building.

# IAQ AHU Assessment

Endeavor Primary Learning Center

Evaluation Requested

Time of Day

Evaluation Date

Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

<b>AHU Room #</b>	<b>Temperature</b>	<b>Range</b>	<b>Relative Humidity</b>	<b>Range</b>	<b>CO2</b>	<b>Range</b>
<input type="text" value="124"/>	<input type="text" value="73.5"/>	<input type="text" value="72 - 78"/>	<input type="text" value="82"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="466"/>	<input 1,000="" ppm)"="" type="text" value("&lt;=""/>
<b>Noticeable Odor</b>	<input type="text" value="Yes"/>	<b>Visible water damage / staining?</b>	<b>Visible microbial growth?</b>	<b>Amount of material affected</b>		
<b>Ceiling Type</b>	<input type="text" value="Metal Deck"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
<b>Wall Type</b>	<input type="text" value="Drywall"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
<b>Flooring</b>	<input type="text" value="Concrete"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>		
	<b>Clean</b>	<b>Minor Dust / Debris</b>	<b>Needs Cleaning</b>	<b>Corrective Action Required</b>		
<b>Room</b>	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text"/>		
<b>Filters</b>	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Replace Filters"/>		
<b>Coil</b>	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		
<b>Pan</b>	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		
<b>Duct</b>	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>		
<b>Motorized Damper Installed</b>	<input type="text" value="Yes"/>	<input type="text"/>				
<b>Damper Open / Operating</b>	<input type="text" value="Yes"/>	<input type="text"/>				
<b>Fresh Air Intake Un-obstructed</b>	<input type="text" value="Yes"/>	<input type="text"/>				
<b>Pollutant Sources Near Air Intake</b>	<input type="text" value="No"/>	<input type="text"/>				
<b>AHU Supply Water Temp</b>	<input type="text" value="Unknown"/>	<b>AHU Return Water Temp</b>	<input type="text" value="Unknown"/>			

**Observations**

**Findings:**

- Filters were recently changed
- Found old fiberglass mesh 1 1/2" thick filters stored in box in room
- Visible microbial growth on chilled water pipe insulation
- Pressure and temperature gauges on the unit are not operational
- Dust and debris throughout the room

**Recommendations:**

**Site Based Maintenance:**

- Change filters at regular intervals
- Discard used filters after changing
- Clean dust and debris from room

**Physical Plant Operations Division:**

- Clean chilled water pipe insulation and treat with anti-microbial

**Project Manager:**

- Investigate cause of microbial growth on chilled water pipe insulation with contractor/consultant and repair as necessary.
- Have all pressure gauges and thermometers replaced.