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April 3, 2006

**Signature on File**

TO: Ms. Shelly Isenberg, Principal  
**Riverglades Elementary School**

FROM: Aston A. Henry, Jr., Supervisor  
Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment  
**FISH 221, 223 and 227**

On January 26, 2006 I conducted an assessment of FISH 221, 223 and 227 at **Riverglades Elementary School**. This evaluation included observations of the flooring system, ceiling tiles, false ceiling plenum, environmental surfaces, interior and exterior walls, and the accessible ventilation equipment. Additionally, environmental parameter measurements were taken to include temperature, relative humidity, and carbon dioxide. The detailed findings, along with the recommended corrective action can be found on the attached IAQ Assessment Worksheets.

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.

Should any questions arise, or if the current concerns continue after the attached recommendations have been addressed, please feel free to contact me at 754-321-3200.

cc: Dr. Joanne Harrison, Area Superintendent  
Craig Anderson, Area Director  
Jeffrey S. Moquin, Director, Risk Management  
Paul Bach, Project Manager, Facilities and Construction Management  
Ruby Fitzgerald, Broward Teachers Union  
Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1  
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division  
Robert Krickovich, Coordinator, LEA, Facilities and Construction Management

AAH/tc  
Enc.

# IAQ Assessment

Location Number 2891  
 Evaluation Requested January 9, 2006  
 Evaluation Date January 26, 2006

Riverglades Elementary School

Time of Day 4:00 pm

Outdoor Conditions      Temperature 70.3      Relative Humidity 47.9      Ambient CO2 388

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<span style="border: 1px solid black; padding: 2px;">221</span>	<span style="border: 1px solid black; padding: 2px;">72.9</span>	<span style="border: 1px solid black; padding: 2px;">72 - 78</span>	<span style="border: 1px solid black; padding: 2px;">44.7</span>	<span style="border: 1px solid black; padding: 2px;">30% - 60%</span>	<span style="border: 1px solid black; padding: 2px;">976</span>	<span style="border: 1px solid black; padding: 2px;">Max 700 &gt; Ambient</span>	<span style="border: 1px solid black; padding: 2px;">2</span>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<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;">None</span>	
Ceiling Type	<span style="border: 1px solid black; padding: 2px;">2 x 4 Lay In</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;">None</span>		
Wall Type	<span style="border: 1px solid black; padding: 2px;">Drywall</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;">None</span>		
Flooring	<span style="border: 1px solid black; padding: 2px;">Tile/Carpet</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;">All Carpet</span>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<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>
Walls	<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>
Flooring	<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;">Remove stained carpet and install tile</span>
HVAC Supply Grills	<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 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;">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>
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:

- No signs of moisture intrusion or microbial growth
- Ceiling tiles are clean and dry and false ceiling plenum appeared clean and dry at accessed location
- Odor in the room appears to be coming from the carpet. Carpet is heavily stained and soiled
- Minor dust and debris on HVAC return grills
- CO2 level was slightly elevated for only 2 occupants in the room

### 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:

- Remove carpet and replace with tile
- Evaluate and repair HVAC system (fresh air damper) to lower CO2 level

# IAQ Assessment

Riverglades Elementary School

Location Number 2891  
 Evaluation Requested January 9, 2006  
 Evaluation Date January 26, 2006

Time of Day 4:30 pm

Outdoor Conditions      Temperature 70.3      Relative Humidity 47.9      Ambient CO2 388

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<span style="border: 1px solid black; padding: 2px;">223</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;"></span>
Noticeable Odor <span style="border: 1px solid black; padding: 2px;"></span>		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling Type	<span style="border: 1px solid black; padding: 2px;"></span>		<span style="border: 1px solid black; padding: 2px;"></span>	<span style="border: 1px solid black; padding: 2px;"></span>	<span style="border: 1px solid black; padding: 2px;"></span>		
Wall Type	<span style="border: 1px solid black; padding: 2px;"></span>		<span style="border: 1px solid black; padding: 2px;"></span>	<span style="border: 1px solid black; padding: 2px;"></span>	<span style="border: 1px solid black; padding: 2px;"></span>		
Flooring	<span style="border: 1px solid black; padding: 2px;"></span>		<span style="border: 1px solid black; padding: 2px;"></span>	<span style="border: 1px solid black; padding: 2px;"></span>	<span style="border: 1px solid black; padding: 2px;"></span>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<span style="border: 1px solid black; padding: 2px;"></span>
Walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<span style="border: 1px solid black; padding: 2px;"></span>
Flooring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<span style="border: 1px solid black; padding: 2px;"></span>
HVAC Supply Grills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<span style="border: 1px solid black; padding: 2px;"></span>
HVAC Return Grills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<span style="border: 1px solid black; padding: 2px;"></span>
Ceiling at Supply Grills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<span style="border: 1px solid black; padding: 2px;"></span>
Surfaces in Room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<span style="border: 1px solid black; padding: 2px;"></span>

**Observations**

**Findings: Mechanical Room**  
 - Water and slime build up in drain pan

**Recommendations:**  
**Site Based Maintenance:**  
 - 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:**  
 - Evaluate cause of water and slime build up in drain pan and repair/clean as appropriate

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Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<span style="border: 1px solid black; padding: 2px;">227</span>	<span style="border: 1px solid black; padding: 2px;">73.1</span>	<span style="border: 1px solid black; padding: 2px;">72 - 78</span>	<span style="border: 1px solid black; padding: 2px;">44.9</span>	<span style="border: 1px solid black; padding: 2px;">30% - 60%</span>	<span style="border: 1px solid black; padding: 2px;">998</span>	<span style="border: 1px solid black; padding: 2px;">Max 700 &gt; Ambient</span>	<span style="border: 1px solid black; padding: 2px;">2</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;">No</span>		<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;">None</span>	
Ceiling Type	<span style="border: 1px solid black; padding: 2px;">2 x 4 Lay In</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;">None</span>		
Wall Type	<span style="border: 1px solid black; padding: 2px;">Drywall</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;">None</span>		
Flooring	<span style="border: 1px solid black; padding: 2px;">Tile/Carpet</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;">All Carpet</span>		

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Walls	<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>
Flooring	<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;">Remove stained carpet and install tile</span>
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