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November 18, 2005

**Signature on File**

TO: Ms. Mary Ellen Bouchie-Vos, Principal  
**Mirror Lake Elementary School**

FROM: Kenneth I. Partee, Project Manager, Occupational Health and Environmental Control  
Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment  
FISH 127

On November 8, 2005 the IAQ Assessment Team conducted an assessment of FISH 127 at **Mirror Lake Elementary School**. 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.

Generally, the IAQ Assessment did not identify any existing conditions significantly impacting IAQ and thereby presenting immediate health and safety concerns 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. Verda Farrow, Area Superintendent  
David Goldstein, Area Director  
Jeffrey S. Moquin, Director, Risk Management  
Wayne Thrasher, 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  
Robert Krickovich, Coordinator, LEA, Facilities and Construction Management

KP/tc  
Enc.

# IAQ Assessment

Location Number 1841  
 Evaluation Requested November 8, 2005  
 Evaluation Date November 8, 2005

Mirror Lake Elementary School

Time of Day 1:36 pm

Outdoor Conditions      Temperature 84.5      Relative Humidity 55.5      Ambient CO2 548

|   |  |   |  |   |   |  |   |
|---|--|---|--|---|---|--|---|
| Fish  | Temperature  | Range   | Relative Humidity  | Range   | CO2   | Range  | # Occupants   |
| <span style="border: 1px solid black; padding: 2px;">127</span> | <span style="border: 1px solid black; padding: 2px;">71.9</span>         | <span style="border: 1px solid black; padding: 2px;">72 - 78</span> | <span style="border: 1px solid black; padding: 2px;">58.2</span> | <span style="border: 1px solid black; padding: 2px;">30% - 60%</span> | <span style="border: 1px solid black; padding: 2px;">908</span>                 | <span style="border: 1px solid black; padding: 2px;">Max 700 &gt; Ambient</span> | <span style="border: 1px solid black; padding: 2px;">3</span> |
| Noticeable Odor   | <span style="border: 1px solid black; padding: 2px;">Yes</span>          |   | Visible water damage / staining?                                 | Visible microbial growth?   | Amount of material affected   |  |   |
| Ceiling Type  | <span style="border: 1px solid black; padding: 2px;">2 x 4 Lay In</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;">Outside of FISH 127</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;">West wall</span>           |  |   |
| Flooring  | <span style="border: 1px solid black; padding: 2px;">Tile</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>                |  |   |

|                          | 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;">Yes</span> | <span style="border: 1px solid black; padding: 2px;">Yes</span> | <span style="border: 1px solid black; padding: 2px;">Replace 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 solution</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;">Clean and sanitize</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;">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>   |
| 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;">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 as appropriate</span>                     |

## Observations

### Findings:

- Visible microbial growth on West wall
- Elevated moisture readings on West wall
- Possible moisture intrusion from room above FISH 127 (AHU pans or leak)
- Stained ceiling tiles outside of FISH 127 door
- Dust and debris on floor
- Dust and debris on environmental surfaces

### Recommendations:

#### Site Based Maintenance:

- Clean West wall with Wexcide disinfectant solution
- Clean and sanitize floor
- Clean environmental surfaces as appropriate
- 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 cause of moisture and microbial growth on West wall and repair/replace drywall as appropriate
- Evaluate room above FISH 127 for possible moisture intrusion (AHU pans or leak)
- Evaluate cause of stained ceiling tiles outside of FISH 127 and repair. Replace ceiling tiles as appropriate

### Hurricane Related