

# RISK MANAGEMENT...

managing risk with responsibility

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September 26, 2008

**Signature on File**

TO: Ms. Fran Rubinstein, Principal  
**Tedder Elementary School**

FROM: Robert Krickovich, Coordinator, LEA  
Facilities and Construction Management

SUBJECT: Indoor Air Quality (IAQ) Assessment  
**FISH 141, 142, 143, 144, 148 and 150**

| <b>For Custodial Supervisor Use Only</b> |                                |
|--|--------------------------------|
| <input type="checkbox"/>                 | Custodial Issues Addressed     |
| <input type="checkbox"/>                 | Custodial Issues Not Addressed |
| _____                                    |                                |
| _____                                    |                                |

On September 23, 2008 I conducted an assessment of FISH 141, 142, 143, 144, 148 and 150 at **Tedder 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.

*Please ensure that your Head Facilities Serviceperson receives a copy of this correspondence so that the recommendations requiring their attention can be addressed. Within two weeks a representative from the Custodial/Grounds Department will conduct a follow-up visit to ensure that all 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 me at 754-321-1638.

cc: Sharon Airaghi, Area Superintendent  
David Hall, Area Director  
Jeffrey S. Moquin, Director, Risk Management  
Sam Bays, Project Manager, Facilities and Construction Management  
Lynn Cavall, Broward Teachers Union  
Roy Jarrett, Federation of Public Employees  
Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1  
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division

RK/tc  
Enc.

# IAQ Assessment

Location Number 0571  
 Evaluation Requested September 18, 2008  
 Evaluation Date September 23, 2008

Tedder Elementary School

Time of Day 1:50 pm

Outdoor Conditions      Temperature 8234      Relative Humidity 76.8      Ambient CO2 421

|                 |             |                                  |                   |                           |     |                             |             |
|-----------------|-------------|----------------------------------|-------------------|---------------------------|-----|-----------------------------|-------------|
| Fish            | Temperature | Range                            | Relative Humidity | Range                     | CO2 | Range                       | # Occupants |
| 141             | 74.8        | 72 - 78                          | 63.6              | 30% - 60%                 | 643 | Max 700 > Ambient           | 8           |
| Noticeable Odor |             | Visible water damage / staining? |                   | Visible microbial growth? |     | Amount of material affected |             |
| Ceiling Type    |             | Yes                              |                   | No                        |     | 1 ceiling tile              |             |
| Wall Type       |             | No                               |                   | No                        |     | None                        |             |
| Flooring        |             | No                               |                   | No                        |     | None                        |             |

|                          | Clean | Minor Dust / Debris | Needs Cleaning | Corrective Action Required              |
|--------------------------|-------|---------------------|----------------|---|
| Ceiling                  | No    | Yes                 | Yes            | Remove and replace stained ceiling tile |
| Walls                    | Yes   | No                  | No             |   |
| Flooring                 | Yes   | No                  | No             |   |
| HVAC Supply Grills       | Yes   | No                  | No             |   |
| HVAC Return Grills       | Yes   | No                  | No             |   |
| Ceiling at Supply Grills | Yes   | No                  | No             |   |
| Surfaces in Room         | Yes   | No                  | No             |   |

**Observations**

**Findings:**  
 - One stained ceiling tile and stained/rusted ceiling grid over door to FISH 141A  
 - Humidity level was elevated at the time of the assessment

**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 stained ceiling tile and ceiling grid over door to FISH 141A and repair as appropriate.

**Facilities and Construction Management:**  
 - Contact the contractor to evaluate and repair HVAC under warranty to reduce humidity level

# IAQ Assessment

Location Number   
 Evaluation Requested   
 Evaluation Date

Tedder Elementary School

Time of Day

Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

|                                  |  |                                      |                                   |  |                                   |   |                                |
|----------------------------------|--|--------------------------------------|-----------------------------------|--|-----------------------------------|---|--------------------------------|
| Fish                             | Temperature                                | Range                                | Relative Humidity                 | Range                                  | CO2                               | Range   | # Occupants                    |
| <input type="text" value="142"/> | <input type="text" value="72.5"/>          | <input type="text" value="72 - 78"/> | <input type="text" value="68.6"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="552"/>  | <input type="text" value="Max 700 &gt; Ambient"/> | <input type="text" value="1"/> |
| Noticeable Odor                  |  | Visible water damage / staining?     |                                   | Visible microbial growth?              |                                   | Amount of material affected                       |                                |
| <input type="text" value="No"/>  |  | <input type="text" value="No"/>      |                                   | <input type="text" value="No"/>        |                                   | <input type="text" value="None"/>                 |                                |
| Ceiling Type                     | <input type="text" value="2 x 4 Lay In"/>  |                                      | <input type="text" value="No"/>   | <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="None"/> |   |                                |
| 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="Yes"/> | <input type="text" value="No"/> | <input type="text" value="No"/> | <input type="text"/>       |
| 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:**  
 - Humidity level was elevated at the time of the assessment

**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

**Facilities and Construction Management:**  
 - Contact the contractor to evaluate and repair HVAC under warranty to reduce humidity level

# IAQ Assessment

Location Number 0571  
 Evaluation Requested September 18, 2008  
 Evaluation Date September 23, 2008

Tedder Elementary School

Time of Day 1:50 pm

Outdoor Conditions      Temperature 8234      Relative Humidity 76.8      Ambient CO2 421

|   |   |   |  |   |  |  |   |
|---|---|---|--|---|--|--|---|
| Fish  | Temperature   | Range   | Relative Humidity  | Range   | CO2  | Range  | # Occupants   |
| <span style="border: 1px solid black; padding: 2px;">143</span> | <span style="border: 1px solid black; padding: 2px;">71.6</span>          | <span style="border: 1px solid black; padding: 2px;">72 - 78</span> | <span style="border: 1px solid black; padding: 2px;">68.8</span> | <span style="border: 1px solid black; padding: 2px;">30% - 60%</span> | <span style="border: 1px solid black; padding: 2px;">576</span>  | <span style="border: 1px solid black; padding: 2px;">Max 700 &gt; Ambient</span> | <span style="border: 1px solid black; padding: 2px;">1</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 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;">12 x 12 Vinyl</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;">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; height: 20px; width: 100%;"></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; height: 20px; width: 100%;"></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; height: 20px; width: 100%;"></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; height: 20px; width: 100%;"></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; height: 20px; width: 100%;"></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; height: 20px; width: 100%;"></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; height: 20px; width: 100%;"></span> |

**Observations**

**Findings:**  
 - Roaches under sink area  
 - Humidity level was elevated at the time of the assessment

**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:**  
 - Initiate a work order for pest control to investigate and treat under sink area

**Facilities and Construction Management:**  
 - Contact the contractor to evaluate and repair HVAC under warranty to reduce humidity level

# IAQ Assessment

Location Number   
 Evaluation Requested   
 Evaluation Date

Tedder Elementary School

Time of Day

Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

|                                  |  |                                      |                                   |  |  |   |                                |
|----------------------------------|--|--------------------------------------|-----------------------------------|--|--|---|--------------------------------|
| Fish                             | Temperature                                | Range                                | Relative Humidity                 | Range                                  | CO2  | Range   | # Occupants                    |
| <input type="text" value="144"/> | <input type="text" value="73"/>            | <input type="text" value="72 - 78"/> | <input type="text" value="68.1"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="562"/>           | <input type="text" value="Max 700 &gt; Ambient"/> | <input type="text" value="1"/> |
| 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 4 Lay In"/>  |                                      | <input type="text" value="No"/>   | <input type="text" value="No"/>        | <input type="text" value="None"/>          |   |                                |
| Wall Type                        | <input type="text" value="Drywall"/>       |                                      | <input type="text" value="Yes"/>  | <input type="text" value="No"/>        | <input type="text" value="5 square feet"/> |   |                                |
| 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="No"/>  | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Repair/replace wall material as necessary"/> |
| 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="Yes"/> | <input type="text" value="No"/>  | <input type="text" value="No"/>  | <input type="text"/>   |
| 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 wall material under window to the left of the sink - @ 5 square feet  
 - Humidity level was elevated at the time of the assessment

**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 damaged wall under window to the left of the sink and repair as appropriate. Repair/replace wall material as necessary.

**Facilities and Construction Management:**  
 - Contact the contractor to evaluate and repair HVAC under warranty to reduce humidity level

# IAQ Assessment

Location Number 0571  
 Evaluation Requested September 18, 2008  
 Evaluation Date September 23, 2008

Tedder Elementary School

Time of Day 1:50 pm

Outdoor Conditions      Temperature 8234      Relative Humidity 76.8      Ambient CO2 421

|                 |             |                                  |                   |                           |     |                             |             |
|-----------------|-------------|----------------------------------|-------------------|---------------------------|-----|-----------------------------|-------------|
| Fish            | Temperature | Range                            | Relative Humidity | Range                     | CO2 | Range                       | # Occupants |
| 148             | 73.2        | 72 - 78                          | 69.6              | 30% - 60%                 | 533 | Max 700 > Ambient           | 1           |
| Noticeable Odor |             | Visible water damage / staining? |                   | Visible microbial growth? |     | Amount of material affected |             |
| Ceiling Type    |             | Yes                              |                   | No                        |     | 1 ceiling tile              |             |
| Wall Type       |             | No                               |                   | No                        |     | None                        |             |
| Flooring        |             | No                               |                   | No                        |     | None                        |             |

|                          | Clean | Minor Dust / Debris | Needs Cleaning | Corrective Action Required              |
|--------------------------|-------|---------------------|----------------|---|
| Ceiling                  | No    | Yes                 | Yes            | Remove and replace stained ceiling tile |
| Walls                    | Yes   | No                  | No             |   |
| Flooring                 | Yes   | No                  | No             |   |
| HVAC Supply Grills       | Yes   | No                  | No             |   |
| HVAC Return Grills       | Yes   | No                  | No             |   |
| Ceiling at Supply Grills | Yes   | No                  | No             |   |
| Surfaces in Room         | Yes   | No                  | No             |   |

**Observations**

**Findings:**  
 - One stained ceiling tile in FISH 148A  
 - Humidity level was elevated at the time of the assessment

**Recommendations:**

**Site Based Maintenance:**  
 - Remove and replace stained ceiling tile in FISH 148A. If stain returns contact COMPASS to generate a work order for Physical Plant Operations to evaluate cause.  
 - Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

**Facilities and Construction Management:**  
 - Contact the contractor to evaluate and repair HVAC under warranty to reduce humidity level

# IAQ Assessment

Location Number   
 Evaluation Requested   
 Evaluation Date

Tedder Elementary School

Time of Day

Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

|                                  |  |                                      |                                   |  |                                  |   |                                |
|----------------------------------|--|--------------------------------------|-----------------------------------|--|----------------------------------|---|--------------------------------|
| Fish                             | Temperature                                | Range                                | Relative Humidity                 | Range                                  | CO2                              | Range   | # Occupants                    |
| <input type="text" value="150"/> | <input type="text" value="73.1"/>          | <input type="text" value="72 - 78"/> | <input type="text" value="69.4"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="507"/> | <input type="text" value="Max 700 &gt; Ambient"/> | <input type="text" value="1"/> |
| Noticeable Odor                  |  | Visible water damage / staining?     |                                   | Visible microbial growth?              |                                  | Amount of material affected                       |                                |
| <input type="text" value="No"/>  |  | <input type="text" value="No"/>      |                                   | <input type="text" value="No"/>        |                                  | <input type="text" value="None"/>                 |                                |
| Ceiling Type                     | <input type="text" value="2 x 4 Lay In"/>  | <input type="text" value="No"/>      | <input type="text" value="No"/>   | <input type="text" value="No"/>        | <input type="text" value="No"/>  | <input type="text" value="None"/>                 |                                |
| Wall Type                        | <input type="text" value="Drywall"/>       | <input type="text" value="Yes"/>     | <input type="text" value="No"/>   | <input type="text" value="No"/>        | <input type="text" value="No"/>  | <input type="text" value="2 square feet"/>        |                                |
| Flooring                         | <input type="text" value="12 x 12 Vinyl"/> | <input type="text" value="No"/>      | <input type="text" value="No"/>   | <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="No"/>  | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Repair/replace wall material as necessary"/> |
| 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="Yes"/> | <input type="text" value="No"/>  | <input type="text" value="No"/>  | <input type="text"/>   |
| 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 wall material under window to the right of the sink - @ 2 square feet
- Insect droppings under sink
- Humidity level was elevated at the time of the assessment

**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 damaged wall under window to the right of the sink and repair as appropriate. Repair/replace wall material as necessary.
- Initiate a work order for pest control to investigate and treat under sink area

**Facilities and Construction Management:**

- Contact the contractor to evaluate and repair HVAC under warranty to reduce humidity level