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Risk Management Department

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April 9, 2012

Signature on File

TO: Dr. David Basile, Principal
South Plantation High School

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

SUBJECT: Indoor Air Quality (IAQ) Assessment

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

On February 8, 2012, I conducted an assessment at **South Plantation High School**. Attached are findings and recommendations for further assessment, remediation, or corrective actions needed.

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

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

Should any questions arise, or if the current concerns continue after the attached recommendations have been addressed, please feel free to contact us at 754-321-1907.

cc: Area Superintendent
Area Directors
Shelley Meloni, Executive Director, Facilities and Construction Management
Mark Dorsett, Acting Director, Physical Plant Operations Division, Maintenance
Sonja Coley, Project Manager III, Facilities and Construction Management
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division
Aston Henry, Supervisor, Risk Management
Broward Teachers Union
Federation of Public Employees

RK/tc
Enc.

IAQ Assessment

South Plantation High School

Location Number
 Evaluation Requested
 Evaluation Date

Time of Day

Outdoor Conditions Temperature Relative Humidity Ambient CO2

| | | | | | | | |
|----------------------------------|--|--------------------------------------|-----------------------------------|--|----------------------------------|---|---------------------------------|
| Fish | Temperature | Range | Relative Humidity | Range | CO2 | Range | # Occupants |
| <input type="text" value="159"/> | <input type="text" value="72.5"/> | <input type="text" value="72 - 78"/> | <input type="text" value="58.3"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="695"/> | <input type="text" value="Max 700 > Ambient"/> | <input type="text" value="15"/> |
| 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 2 Lay In"/> | <input type="text" value="No"/> | <input type="text" value="No"/> | <input type="text" value="None"/> | | | |
| Wall Type | <input type="text" value="Plaster"/> | <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="No"/> | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean as appropriate"/> |
| 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

- Standing water on sink counter top. Caulk is deteriorated.
- Floor tile slightly stained and worn

Site Based Maintenance:

- Ensure sink counter top is wiped down after use and water is not left standing. Caulk counter top to prevent water from running behind the sink cabinet.
- Thoroughly clean and sanitize flooring
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

IAQ Assessment

South Plantation High School

Location Number
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 Evaluation Date

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Outdoor Conditions Temperature Relative Humidity Ambient CO2

| | | | | | | | |
|----------------------------------|---|--------------------------------------|-----------------------------------|--|----------------------------------|---|--------------------------------|
| Fish | Temperature | Range | Relative Humidity | Range | CO2 | Range | # Occupants |
| <input type="text" value="161"/> | <input type="text" value="67.9"/> | <input type="text" value="72 - 78"/> | <input type="text" value="74.2"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="481"/> | <input type="text" value="Max 700 > Ambient"/> | <input type="text" value="4"/> |
| Noticeable Odor | | Visible water damage / staining? | | Visible microbial growth? | | Amount of material affected | |
| <input type="text" value="No"/> | | <input type="text" value="Yes"/> | | <input type="text" value="Yes"/> | | <input type="text" value="8 ceiling tiles"/> | |
| Ceiling Type | <input type="text" value="2 x 2 Lay In"/> | <input type="text" value="No"/> | | <input type="text" value="No"/> | | <input type="text" value="None"/> | |
| Wall Type | <input type="text" value="Ceramic Tile"/> | <input type="text" value="No"/> | | <input type="text" value="No"/> | | <input type="text" value="None"/> | |
| Flooring | <input type="text" value="Epoxy"/> | <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="No"/> | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Remove and replace"/> |
| Walls | <input type="text" value="Yes"/> | <input type="text" value="No"/> | <input type="text" value="No"/> | <input type="text" value=""/> |
| Flooring | <input type="text" value="No"/> | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean as appropriate"/> |
| HVAC Supply Grills | <input type="text" value="No"/> | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean as appropriate"/> |
| HVAC Return Grills | <input type="text" value="No"/> | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean as appropriate"/> |
| Ceiling at Supply Grills | <input type="text" value="Yes"/> | <input type="text" value="No"/> | <input type="text" value="No"/> | <input type="text" value=""/> |
| Surfaces in Room | <input type="text" value="Yes"/> | <input type="text" value="No"/> | <input type="text" value="No"/> | <input type="text" value=""/> |

Observations

Findings

- Dirt and staining on flooring in 161 and 161G
- Temperature was low and humidity was elevated
- Stained ceiling tiles in 161 and 161H
- Dust and visible microbial growth on HVAC supply and return grills

Site Based Maintenance:

- Thoroughly clean and sanitize flooring in 161 and 161G
- Remove and replace stained ceiling tiles as necessary until repairs are completed
- 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:

- Evaluate for cause of stained ceiling tiles in 161 and 161H and repair as appropriate. Remove and replace ceiling tiles as necessary.

Facilities and Construction Management

- Expedite HVAC work being done by contractor

- NOTE: Work order EQ02307, 2308, 2309 and 2310 generated 3/1/2012

IAQ Assessment

Location Number

South Plantation High School

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="161A"/> | <input type="text" value="68"/> | <input type="text" value="72 - 78"/> | <input type="text" value="68"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="480"/> | <input type="text" value="Max 700 > Ambient"/> | <input type="text" value="1"/> |
| Noticeable Odor | | Visible water damage / staining? | | Visible microbial growth? | | Amount of material affected | |
| <input type="text" value="Yes"/> | | <input type="text" value="No"/> | | <input type="text" value="No"/> | | <input type="text" value="None"/> | |
| Ceiling Type | <input type="text" value="2 x 2 Lay In"/> | | <input type="text" value="No"/> | <input type="text" value="No"/> | <input type="text" value="None"/> | | |
| Wall Type | <input type="text" value="Plaster"/> | | <input type="text" value="No"/> | <input type="text" value="No"/> | <input type="text" value="None"/> | | |
| Flooring | <input type="text" value="Carpet"/> | | <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

- Slightly musty odor in room
- Temperature was low and humidity was elevated
- Visible microbial growth under desk
- Ceiling tiles not installed properly

Site Based Maintenance:

- Clean under desk area with Wexcide disinfectant solution
- Properly install ceiling tiles
- 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

- Expedite HVAC work being done by contractor

IAQ Assessment

South Plantation High School

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Time of Day

Outdoor Conditions Temperature Relative Humidity Ambient CO2

| | | | | | | | |
|-----------------------------------|---|--------------------------------------|-----------------------------------|--|----------------------------------|---|--------------------------------|
| Fish | Temperature | Range | Relative Humidity | Range | CO2 | Range | # Occupants |
| <input type="text" value="161L"/> | <input type="text" value="70.2"/> | <input type="text" value="72 - 78"/> | <input type="text" value="77.5"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="466"/> | <input type="text" value="Max 700 > Ambient"/> | <input type="text" value="2"/> |
| Noticeable Odor | | Visible water damage / staining? | | Visible microbial growth? | | Amount of material affected | |
| <input type="text" value="Yes"/> | | <input type="text" value="No"/> | | <input type="text" value="No"/> | | <input type="text" value="None"/> | |
| Ceiling Type | <input type="text" value="2 x 2 Lay In"/> | <input type="text" value="No"/> | <input type="text" value="No"/> | <input type="text" value="None"/> | | | |
| Wall Type | <input type="text" value="Plaster"/> | <input type="text" value="Yes"/> | <input type="text" value="No"/> | <input type="text" value="6 square feet"/> | | | |
| Flooring | <input type="text" value="Carpet"/> | <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="No"/> | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean as appropriate"/> |
| HVAC Supply Grills | <input type="text" value="No"/> | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean as appropriate"/> |
| HVAC Return Grills | <input type="text" value="No"/> | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean as appropriate"/> |
| 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="No"/> | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean as appropriate"/> |

Observations

Findings

- Temperature was low and humidity was elevated
- Stains and debris on carpet
- Dust and visible microbial growth on HVAC supply and return grills
- Visible microbial growth under tables. Dust build up and staining on all tables and counters.
- Visible water damage/staining under North windows
- Heavy staining on carpet and musty odor

Site Based Maintenance:

- Thoroughly clean and sanitize flooring
- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Clean under tables with Wexcide disinfectant solution. Thoroughly clean all surfaces throughout the room.
- 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 for cause of water damage/staining under windows and repair as appropriate. Repair/replace wall material as necessary.
- Evaluate carpet for replacement with tile

Facilities and Construction Management

- Expedite HVAC work being done by contractor

- NOTE: Work order EQ02307, 2308, 2309 and 2310 generated 3/1/2012

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Outdoor Conditions Temperature Relative Humidity Ambient CO2

| | | | | | | | |
|----------------------------------|---|--------------------------------------|-----------------------------------|--|----------------------------------|---|--------------------------------|
| Fish | Temperature | Range | Relative Humidity | Range | CO2 | Range | # Occupants |
| <input type="text" value="162"/> | <input type="text" value="68"/> | <input type="text" value="72 - 78"/> | <input type="text" value="80.4"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="510"/> | <input type="text" value="Max 700 > Ambient"/> | <input type="text" value="4"/> |
| 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="Yes"/> | | <input type="text" value="1 tile - 1 inch spot"/> | |
| Ceiling Type | <input type="text" value="2 x 2 Lay In"/> | | <input type="text" value="No"/> | <input type="text" value="No"/> | | <input type="text" value="None"/> | |
| Wall Type | <input type="text" value="Drywall/Ceramic Tile"/> | | <input type="text" value="No"/> | <input type="text" value="No"/> | | | |
| Flooring | <input type="text" value="12 x 12 Vinyl/Epoxy"/> | | <input type="text" value="Yes"/> | <input type="text" value="No"/> | | <input type="text" value="water under reach in freezer"/> | |

| | 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="No"/> | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean as appropriate"/> |
| HVAC Return Grills | <input type="text" value="No"/> | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean as appropriate"/> |
| 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

- Visible water on floor under reach in freezer - door gaskets do not seal
- Temperature was low and humidity was elevated
- Small spot (1 inch) on 1 ceiling tile
- Dust and visible microbial growth on HVAC supply and return grills
- Dust build up on light fixtures by HVAC supply grills in the southwest corner of the room

Site Based Maintenance:

- Remove and replace stained ceiling tiles as necessary until repairs are completed
- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Clean dust from light fixtures
- 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 and replace door gaskets on reach in freezer

Facilities and Construction Management

- Expedite HVAC work being done by contractor

- NOTE: Work order EQ02307, 2308, 2309 and 2310 generated 3/1/2012

IAQ Assessment

Location Number

South Plantation High School

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="164"/> | <input type="text" value="71.5"/> | <input type="text" value="72 - 78"/> | <input type="text" value="58.7"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="593"/> | <input type="text" value="Max 700 > Ambient"/> | <input type="text" value="7"/> |
| 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 2 Lay In"/> | | <input type="text" value="No"/> | <input type="text" value="No"/> | <input type="text" value="None"/> | | |
| Wall Type | <input type="text" value="Plaster/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
- No issues identified

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