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January 3, 2006

Signature on File

TO: Ms. Kellee Stroup, Principal
McNab Elementary School

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

SUBJECT: Indoor Air Quality (IAQ) Assessment
FISH 316, 326, 327, 328, 329, 926 and 931

On September 27, 2005 the IAQ Assessment Team conducted an assessment FISH 316, 326, 327, 328, 329, 926 and 931 at **McNab 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 754-321-1638.

cc: Dr. Joanne Harrison, Area Superintendent
Jackie Haywood, Area Director
Jeffrey S. Moquin, Director, Risk Management
Ed Beraldi, Project Manager, Facilities and Construction Management
Jaime Daniels, 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

Location Number 0841

McNab Elementary School

Evaluation Requested September 26, 2005

Time of Day 1:30 pm

Evaluation Date September 27, 2005

Outdoor Conditions Temperature 92.3 Relative Humidity 55.9 Ambient CO2 442

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
316	73.7	72 - 78	43.5	30% - 60%	1139	Max 700 > Ambient	23
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling Type		Yes		No		2 ceiling tiles	
Wall Type		No		No		None	
Flooring		No		No		None	

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

Observations

Findings:

- No visible microbial growth or signs of water intrusion identified

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

IAQ Assessment

Location Number
 Evaluation Requested
 Evaluation Date

McNab 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="326"/>	<input type="text" value="72.4"/>	<input type="text" value="72 - 78"/>	<input type="text" value="45.3"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="979"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text" value="23"/>
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="No"/>		<input type="text" value="2 ceiling tiles"/>	
Ceiling Type	<input type="text" value="2 x 4 Lay In"/>		<input type="text" value="Yes"/>	<input type="text" value="No"/>		<input type="text" value="2 ceiling tiles"/>	
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:

- 1 stained ceiling tile over stove and 1 stained ceiling tile to the right of the windows
- Visible microbial growth and water damage inside cabinet above stove
- Vinyl base missing from cabinet under windows

Recommendations:

Site Based Maintenance:

- Remove non-approved chemicals from room
- Thoroughly clean throw rugs or discard and replace
- 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 for cause of stained ceiling tiles and repair as necessary. Replace stained ceiling tiles as necessary.
- Evaluate for cause of condensation in cabinet over stove
- Repair/replace cabinet over stove
- Replace missing vinyl base on cabinet under windows

IAQ Assessment

Location Number 0841
 Evaluation Requested September 26, 2005
 Evaluation Date September 27, 2005

McNab Elementary School

Time of Day 1:30 pm

Outdoor Conditions Temperature 92.3 Relative Humidity 55.9 Ambient CO2 442

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
327	71.6	72 - 78	44	30% - 60%	1012	Max 700 > Ambient	3
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling Type		No		No		None	
Wall Type		No		No		None	
Flooring		No		No		None	

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
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:

- Visible microbial growth and water damage inside cabinet above stove
- Emergency egress window was partially open

Recommendations:

Site Based Maintenance:

- Ensure that all exterior windows and doors are closed tightly
- 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 for cause of condensation in cabinet over stove
- Repair/replace cabinet over stove

IAQ Assessment

Location Number 0841
 Evaluation Requested September 26, 2005
 Evaluation Date September 27, 2005

McNab Elementary School

Time of Day 1:30 pm

Outdoor Conditions Temperature 92.3 Relative Humidity 55.9 Ambient CO2 442

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
328	72.2	72 - 78	48.7	30% - 60%	998	Max 700 > Ambient	15
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling Type		No		No		None	
Wall Type		No		No		None	
Flooring		No		No		None	

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	Yes	No	No	
Flooring	Yes	No	No	
HVAC Supply Grills	No	Yes	Yes	Clean with Wexcide disinfectant
HVAC Return Grills	Yes	No	No	
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Non-approved SBBC chemicals identified at the time of assessment (Americlean with bleach, Lysol all purpose cleaner and Quality Care spray disinfectant)
- Dust and debris on HVAC supply grills
- Visible microbial growth and water damage inside cabinet above stove
- Throw rugs are heavily soiled and stained

Recommendations:

Site Based Maintenance:

- Remove non-approved chemicals from room
- Clean HVAC supply grills with Wexcide disinfectant solution
- Thoroughly clean throw rugs or discard and replace
- 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 for cause of condensation in cabinet over stove
- Repair/replace cabinet over stove

Note - Teacher advised that there was a water leak in the wall between rooms 326 and 328 and leaked every time it rained. It has been repaired and has not flooded since.

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Outdoor Conditions Temperature 92.3 Relative Humidity 55.9 Ambient CO2 442

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
329	73.1	72 - 78	44.4	30% - 60%	1000	Max 700 > Ambient	1
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Yes				No		None	
Ceiling Type	2 x 4 Lay In		No	No	None		
Wall Type	Drywall		No	No	None		
Flooring	12 x 12 Vinyl		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	Yes	No	No	
Flooring	No	Yes	Yes	Clean and sanitize
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:

- Non-approved SBBC chemicals identified at the time of assessment (air fresheners and deodorizers - very strong perfume/floral odor in the room)
- Dust and debris on floor
- Visible microbial growth and water damage inside cabinet above stove
- Throw rugs are soiled and stained

Recommendations:

Site Based Maintenance:

- Remove non-approved chemicals from room
- Thoroughly clean and sanitize floor
- Thoroughly clean throw rugs
- 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 for cause of condensation in cabinet over stove
- Repair/replace cabinet over stove

IAQ Assessment

Location Number 0841
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McNab Elementary School

Time of Day 1:30 pm

Outdoor Conditions Temperature 92.3 Relative Humidity 55.9 Ambient CO2 442

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
926	71	72 - 78	52.6	30% - 60%	1354	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling Type		Yes		Yes		6 ceiling tiles	
Wall Type		No		No		None	
Flooring		No		No		None	

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	Replace ceiling tiles
Walls	Yes	No	No	
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	Yes	Yes	Clean as appropriate
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Visible microbial growth on 1 ceiling tile - Northeast corner between entry door and door to restroom. Teacher advised leak was repaired several times before but the growth keeps coming back.
- 2 stained ceiling tiles over window and 3 stained ceiling tiles on the West side of the room near windows
- Dust and debris on HVAC supply and return grills
- Dust and dirt on ceiling at HVAC supply grills
- Dust and debris on environmental surfaces throughout the room

Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Clean ceiling at HVAC supply grills as appropriate
- Clean environmental 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 Division:

- Evaluate for cause of stained ceiling tiles and microbial growth on ceiling tile and repair as necessary. Replace stained ceiling tiles as necessary.

IAQ Assessment

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McNab Elementary School

Time of Day 1:30 pm

Outdoor Conditions Temperature 92.3 Relative Humidity 55.9 Ambient CO2 442

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
931	70.1	72 - 78	54.5	30% - 60%	1492	Max 700 > Ambient	1
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
No		No		No		None	
Ceiling Type	2 x 4 Lay In		No	No	None		
Wall Type	Struck Block		No	No	None		
Flooring	12 x 12 Vinyl		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	Yes	No	No	
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	Yes	Yes	Clean as appropriate
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Non-approved SBBC chemicals identified at the time of assessment (Fantastic spray cleaner)
- Dust and debris on HVAC supply and return grills
- Dust and dirt on ceiling at HVAC supply grills

Recommendations:

Site Based Maintenance:

- Remove non-approved chemicals from room
- Clean ceiling tiles as appropriate
- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Clean ceiling at HVAC supply grills as appropriate
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate