

managing risk with responsibility

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October 1, 2009 Signature on File

TO: Ms. Kellee Stroup, Principal

McNab Elementary School

FROM: Edward See, Project Manager

Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment

FISH 201, 209, 315, 329, 332, 338, 340, 347

348, 353, 354, 401, 402, 403 and 926

Custodial Issues Addressed
Custodial Issues Not Addressed

On September 16, 2009, I conducted an assessment of FISH 201, 209, 315, 329, 332, 338, 340, 347, 348, 353, 354, 401, 402, 403 and 926 at **McNab 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. 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 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 754-321-1900.

cc: Sharon Airaghi, Area Superintendent

Jackie Haywood, Area Director

Jeffrey S. Moquin, Executive Director, Support Operations

Aston Henry, Supervisor, Risk Management

Robert Bellot, 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

ES/tc Enc.

	Mc	Nab Elementary	School		Evaluation R	equested September 15, 2009
Time of Day	8:30 am				Evalua	September 16, 2009
Outdoor Condit	tions Tem	perature		Relative Humidity		Ambient CO2
Fish T 201 Noticeable Ode Ceiling Type Wall Type Flooring	7:	2 - 78 Visit dama In Ster	sible water ge / staining? Yes	Visible microl growth?		Range # Occupants Max 700 > Ambient Amount of sterial affected 5 ceiling tiles None
. nooning [Clean	Minor Dust / Debris	Needs Cleaning	No	Corrective	Action Required
Ceiling	No	Yes	Yes	Re	emove and re	eplace ceiling tiles
Walls	Yes	No	No			
Flooring	Yes	No	No			
HVAC Supply	Grills Yes	No	No			
HVAC Return (Grills Yes	No	No			
Ceiling at Supp Grills	ply Yes	No	No			
Surfaces in Ro	om Yes	No	No			
bservations						
Recommendati Site Based Mai - Continue to mo appropriate Physical Plant	ions: ntenance: onitor this locatio	on for any signs c	of microbial g		st and debris	s accumulation and clean as

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McNab Elementary School	Evaluation Requested September 15, 2009
Time of Day 8:30 am	Evaluation Date September 16, 2009
Outdoor Conditions Temperature Relative Humidit	y Ambient CO2
Fish Temperature Range Relative Humidity Range 209 72 - 78 Visible water damage / staining? Visible mick growth Ceiling Type 2 x 4 Lay In No No Wall Type Drywall/Plaster No No No Flooring 12 x 12 Vinyl No No	
Clean Minor Dust Needs / Debris 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 Yes No No Grills	
Surfaces in Room Yes No No	
Dbservations	
Findings: - Previous work order closed. Recurring leak in room. Recommendations: Site Based Maintenance: - Continue to monitor this location for any signs of microbial growth as well as a appropriate	dust and debris accumulation and clean as
Physical Plant Operation: - Evaluate for recurring leak and repair as appropriate.	

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			IAQ Ass	sessment	Locatio	on Number	0841
	Мс	cNab Elementar	y School		Evaluati	ion Requested	September 15, 2009
Time of Day	8:30 am]			E	Evaluation Date	September 16, 2009
Outdoor Condi	tions Ten	mperature		Relative Humidity	,	Ambie	nt CO2
Fish 1		Range Relat	tive Humidity	Range 30% - 60%	CO2 965	Ran Max 700	ge # Occupants > Ambient 22
Noticeable Od	or No		Visible water nage / staining?	Visible micro		Amount of material affec	
Ceiling Type	2 x 4 Lay	In	Yes	No		2 ce	eiling tiles
Wall Type	Drywall/Pla	aster	No	No			None
Flooring	12 x 12 Vi	nyl	No	No			None
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	ctive Action Re	quired
Ceiling	No	Yes	Yes	R	emove a	and replace cei	ling tiles
Walls	Yes	No	No				
Flooring	Yes	No	No				
HVAC Supply	Grills Yes	No	No				
HVAC Return	Grills Yes	No	No				
Ceiling at Sup Grills	ply Yes	No	No				
Surfaces in Ro	oom Yes	No	No				
bservations							
Findings: - 2 stained ceilir - Recurring wate	-	djacent to restro	oom				
Recommendat Site Based Mai - Continue to mo appropriate	ntenance:	on for any signs	s of microbial g	rowth as well as du	ust and d	lebris accumula	ition and clean as

- Evaluate cause of stained ceiling tiles and repair as appropriate. Remove and replace ceiling tiles as necessary.
- Evaluate recurring water leak at wall adjacent to restroom and repair as appropriate. Repair/replace wall material as

Physical Plant Operation:

necessary.

		IAQ As	sessment	Location Number 0841			
	McNab Ele	mentary School		Evaluation Request	ed September 15, 2009		
Time of Day 8:	30 am			Evaluation D	ate September 16, 2009		
Outdoor Conditions	Temperatu	re	Relative Humidity	An	nbient CO2		
329 7 Noticeable Odor Ceiling Type	Range 73.4 72 - 78 No 2 x 4 Lay In Drywall/Plaster 12 x 12 Vinyl	Relative Humidity 61.1 Visible water damage / staining No No	No No	936 Max	None None		
Ceiling	Clean Minor	Dust Needs bris Cleaning	No	Corrective Action	None n Required		
Walls	No	Yes		evaluate and	repair		
Flooring	Yes	lo No					
HVAC Supply Grills	Yes	lo No					
HVAC Return Grills	Yes	lo No					
Ceiling at Supply Grills	Yes	No No					
Surfaces in Room	Yes	o No					
servations							

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Findings:

- Water stain on wall at teacher's desk. Appears to be an active leak.
- Ceiling grids rusted
- Humidity level was slightly 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 Operation:

- Evaluate cause of staining on wall at teacher's desk and rusted ceiling grids and repair as appropriate. Repair/replace wall material and ceiling grid as necessary.
- Evaluate HVAC system for proper operation and repair as appropriate to lower humidity level

McNab Elementary School	Evaluation Requested September 15, 2009
Time of Day 8:30 am	Evaluation Date September 16, 2009
Outdoor Conditions Temperature Relative Humidit	ty Ambient CO2
Fish Temperature Range Relative Humidity Range 332 74.5 72 - 78 58.1 30% - 60% Noticeable Odor No Visible water damage / staining? Visible mic growth Ceiling Type 2 x 4 Lay In No No Wall Type Drywall/Plaster No No Flooring 12 x 12 Vinyl No No	n? material affected None None
Clean Minor Dust Needs / Debris Cleaning	Corrective Action Required
Ceiling Yes Yes Yes	
Walls Yes No No	
Flooring Yes No No	
HVAC Supply Grills Yes No No	
HVAC Return Grills Yes No No	
Ceiling at Supply Yes No No Grills	
Surfaces in Room Yes No No	
bservations	
Findings: - No issues identified at the time of the assessment Recommendations: Site Based Maintenance: - Continue to monitor this location for any signs of microbial growth as well as appropriate	dust and debris accumulation and clean as

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McNab Elementary School	Evaluation Requested September 15, 2009
Time of Day 8:30 am	Evaluation Date September 16, 2009
Outdoor Conditions Temperature Relative Humidit	y Ambient CO2
Fish Temperature Range Relative Humidity Range 338 72.3 72 - 78 48.3 30% - 60% Noticeable Odor No Visible water damage / staining? Visible microdamage / staining? Ceiling Type 2 x 4 Lay In No No Wall Type Drywall/Plaster No No Flooring 12 x 12 Vinyl No No	
Clean Minor Dust Needs / Debris Cleaning Ceiling Yes Yes Yes	Corrective Action Required
Walls Yes No No	
Flooring Yes No No	
HVAC Supply Grills Yes No No	
HVAC Return Grills Yes No No	
Ceiling at Supply Yes No No Grills	
Surfaces in Room Yes No No	
bservations	
Findings: - No issues identified at the time of the assessment Recommendations: Site Based Maintenance: - Continue to monitor this location for any signs of microbial growth as well as appropriate	dust and debris accumulation and clean as

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McNab Elementary School								Evaluat	ion Re	quested	Septe	mber	15, 2009	
Time of Day	8:	30 am							E	Evalua	tion Date	Septe	mber	16, 2009
Outdoor Cond	itions	Tem	perature			Rela	itive Hu	ımidity			Ambie	nt CO2		
Fish 340	Tempe		Range 2 - 78		Humidity 7.3		ange - 60%		CO2 1036		Ran Max 700	_		ccupants 21
Noticeable Oc	dor	No			ole water / staining		Visibl	e micro			Amount of		L	
Ceiling Type		2 x 4 Lay	In	_	es es	j:		No		ma	terial affec 1 c	tea eiling ti	le	
Wall Type	I	Drywall/Pla	ster		No			No				None		
Flooring		12 x 12 Vi	nyl		No			No				None		
		Clean	Minor D		Needs Cleaning				Corre	ctive /	Action Re	quired		
Ceiling		No	Yes		Yes			R	Remove	and r	eplace ce	iling til	le	
Walls		Yes	No]	No									
Flooring		Yes	No		No									
HVAC Supply	Grills	Yes	No]	No									
HVAC Return	Grills	Yes	No]	No									
Ceiling at Sup Grills	oply	Yes	No]	No									
Surfaces in Ro	oom	Yes	No]	No									
bservations														
Findings: - One stained of Pests observed	_		he assess	sment										
Recommendate Site Based Marge Contact COM - Continue to mappropriate	<u>ainten:</u> IPASS	ance: to generat					:h as we	ell as di	ust and o	debris	accumula	ition an	d clea	n as
Physical Plant - Evaluate caus			ng tile and	d repair a	s appropr	iate.	Remov	e and r	replace o	ceiling	tiles as no	ecessai	ry.	

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McNab Elementary School	Evaluation Requested September 15, 2009
Time of Day 8:30 am	Evaluation Date September 16, 2009
Outdoor Conditions Temperature Relative Humidit	y Ambient CO2
Fish Temperature Range 73.8 72 - 78 47.2 30% - 60% Noticeable Odor No Visible water damage / staining? Growth Ceiling Type 2 x 4 Lay In No No No No Starting Plaster No	? material affected None None
Flooring 12 x 12 Vinyl No No	None
Clean Minor Dust Needs / Debris Cleaning Ceiling Yes No No No Walls Yes No No No Flooring Yes No No No HVAC Supply Grills Yes No No No HVAC Return Grills Yes No No No No HVAC Return Grills Yes No	Corrective Action Required
Ceiling at Supply Yes No No No	
Surfaces in Room Yes No No	
bservations	_
Findings: - No issues identified at the time of the assessment Recommendations: Site Based Maintenance: - Continue to monitor this location for any signs of microbial growth as well as appropriate	dust and debris accumulation and clean as

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McNab Elementary School	Evaluation Requested September 15, 2009
Time of Day 8:30 am	Evaluation Date September 16, 2009
Outdoor Conditions Temperature Relative Humidi	ty Ambient CO2
Fish Temperature Range Relative Humidity Range 348 70.9 72 - 78 46.7 30% - 60% Noticeable Odor No Visible water damage / staining? Growth Ceiling Type 2 x 4 Lay In No No No Wall Type Drywall/Plaster No No	h? material affected None None
Flooring 12 x 12 Vinyl No No	None
Clean Minor Dust Needs / Debris Cleaning Ceiling Yes No No No Walls	Corrective Action Required
Flooring Yes No No	
HVAC Supply Grills Yes No No	
HVAC Return Grills Yes No No	
Ceiling at Supply Yes No No Grills	
Surfaces in Room Yes No No	
bservations	
Findings: - Occupants reported temperature is too hot. Second reading taken at noon - Recommendations: Site Based Maintenance: - Continue to monitor this location for any signs of microbial growth as well as appropriate	

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McNab Elementary School	Evaluation Requested September 15, 2009
Time of Day 8:30 am	Evaluation Date September 16, 2009
Outdoor Conditions Temperature Relative Humidit	ty Ambient CO2
Fish Temperature Range Relative Humidity Range 353 73.2 72 - 78 47.1 30% - 60% Noticeable Odor No Visible water damage / staining? Visible microdamage / staining? Ceiling Type 2 x 4 Lay In No No Wall Type Drywall/Plaster No No Flooring 12 x 12 Vinyl No No	
Clean Minor Dust Needs / Debris Cleaning Ceiling Yes No No	Corrective Action Required
Walls Yes No No	
Flooring Yes No No	
HVAC Supply Grills Yes No No	
HVAC Return Grills Yes No No	
Ceiling at Supply Yes No No Grills	
Surfaces in Room Yes No No	
bservations	
Findings: - No issues identified at the time of the assessment Recommendations: Site Based Maintenance: - Continue to monitor this location for any signs of microbial growth as well as appropriate	dust and debris accumulation and clean as

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McNab Elementary School	Evaluation Requested September 15, 2009
Time of Day 8:30 am	Evaluation Date September 16, 2009
Outdoor Conditions Temperature Relative Humidit	ty Ambient CO2
Fish Temperature Range Relative Humidity Range 354 72.7 72 - 78 45.2 30% - 60% Noticeable Odor No Visible water damage / staining? Visible microdamage / staining? Ceiling Type 2 x 4 Lay In No No Wall Type Drywall/Plaster No No Flooring 12 x 12 Vinyl No No	n? material affected None None
Flooring 12 x 12 Vinyl No No No Clean Minor Dust Needs / Debris Cleaning	None 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 Yes No No Grills	
Surfaces in Room Yes No No	
bservations	
Findings: - No issues identified at the time of the assessment Recommendations: Site Based Maintenance: - Continue to monitor this location for any signs of microbial growth as well as appropriate	dust and debris accumulation and clean as

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McNab Elementary School Evaluation Requested September 15, 2009
Time of Day 8:30 am Evaluation Date September 16, 2009
Outdoor Conditions Temperature Relative Humidity Ambient CO2
Fish Temperature Range Relative Humidity Range CO2 Range # Occupants 401 & 402 72 - 78 Visible water damage / staining? Visible microbial growth? Ceiling Type
Flooring 12 x 12 Vinyl No No None
Clean Minor Dust / Debris Cleaning Ceiling Yes No No No Walls Walls Yes No
Flooring Yes No No
HVAC Supply Grills Yes No No
HVAC Return Grills Yes No No
Ceiling at Supply Yes No No Sills
Surfaces in Room Yes No No
bservations
Findings: - No toilet paper, hand towel or soap dispenser in FISH 401 or 402 Recommendations: Site Based Maintenance: - Generate a work order to have toilet paper, hand towel and soap dispenser installed in rooms - Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

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	Мс	Nab Elementary	School		Evaluation	Requested [September 15, 2009		
Time of Day	8:30 am				Eval	uation Date [September 16, 2009		
Outdoor Condi	tions Tem	perature		Relative Humidity	,	Ambier	nt CO2		
Fish 1		2 - 78	· · · · · · · · · · · · · · · · · · ·	Range 30% - 60%	CO2	Ran	ge # Occupants > Ambient		
Noticeable Od	or No		sible water ge / staining?	Visible micro growth?		Amount of naterial affect			
Ceiling Type	2 x 4 Lay	ln	No	No			None		
Wall Type	Drywall/Pla	ster	No	No		[None		
Flooring	12 x 12 Vii	nyl	No	No			None		
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective	e Action Re	quired		
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 Sup Grills	ply Yes	No	No						
Surfaces in Ro	oom Yes	No	No						
bservations									
Findings: - Elevated moisture content in all walls - Water leaking from A/C unit - Visible microbial growth on ceiling tiles and walls									
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 Operation: - Evaluate for cause of water intrusion and repair as appropriate. Repair/replace wall material and ceiling tiles as necessary Evaluate A/C unit for leak and repair as appropriate									

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	Mcl	Nab Elementary	School		Evaluation	Requested September 15, 2009			
Time of Day	8:30 am				Eval	uation Date September 16, 2009			
Outdoor Condit	ions Tem	perature		Relative Humidity		Ambient CO2			
Fish To 926		ange Relati	ve Humidity 56.3	Range	CO2 934	Range # Occupants Max 700 > Ambient 2			
				30% - 60%					
Noticeable Odd	or No		isible water age / staining1	Visible micro growth?		Amount of material affected			
Ceiling Type	2 x 4 Lay I		Yes	No		1 ceiling tile			
Wall Type	Drywall/Plas		No	No	<u> </u>	None			
Flooring	12 x 12 Vin	ıyl	No	No		None			
	Clean	Minor Dust / Debris	Needs Cleaning		Correctiv	re Action Required			
Ceiling	No	Yes	Yes	R	Remove and replace ceiling tile				
Walls	Yes	No	No						
Flooring	Yes	No	No						
HVAC Supply (Grills Yes	No	No						
HVAC Return C	Grills Yes	No	No						
Ceiling at Supp Grills	oly Yes	No	No						
Surfaces in Ro	om Yes	No	No						
bservations									
Findings: - One stained ce	eiling tile								
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 Operation: - Evaluate cause of stained ceiling tile and repair as appropriate. Remove and replace ceiling tiles as necessary.									

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