

# managing risk with responsibility

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May 2, 2008 **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 318, 327, 328, 329, 332, 335 and 934

On March 27, 2008 I conducted an assessment of FISH 318, 327, 328, 329, 332, 335 and 934 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. 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 754-321-3200.

cc: Dr. Joanne Harrison, Area Superintendent
Jackie Haywood, Area Director
Jeffrey S. Moquin, Director, 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
Robert Krickovich, Coordinator, LEA, Facilities and Construction Management

ES/tc Enc.

	M	cNab Elemei	ntary School		Evaluat	ion Requested	March 20, 2008	
Time of Day	1:00 pm	]			i.	Evaluation Date	March 27, 2008	
<b>Outdoor Cond</b>	itions Ter	nperature	78.1	Relative Hum	idity 52.8	Ambiei	nt CO2 458	
Fish	Temperature	Range F	Relative Humidity	Range	CO2	Ran	ge # Occupants	
318	72.6	72 - 78	55.9	30% - 60%	815	Max 700 :	> Ambient 3	
Noticeable O	dor No	] ,	Visible water damage / staining		microbial wth?	Amount of mat affected	erial	
Ceiling Type	2 x 4 Lay	' In	Yes	N	lo	1 cc	eiling tile	
Wall Type	Drywall/Pla	aster	No	N	lo		None	
Flooring	Vinyl		No	N	lo		None	
	Clean	Minor Du / Debris			Correc	ctive Action Re	quired	
Ceiling	Yes	No	No		Remove	and replace cei	ling tile	
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 R	oom No	Yes	Yes		Clea	an as appropria	ite	
Observations								
Findings: - 1 stained ceiling - Dust build up		ll surfaces the	roughout the roo	m				
Recommendations:								
Site Based Maintenance: - Remove and replace stained ceiling tiles - 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 - Evaluate caus		ng tiles and r	repair as appropr	iate.				

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Time of Day	1:00 pm				E	March 27, 2008
Outdoor Condition	ons Tem	perature 7	8.1	Relative Humidity	52.8	Ambient CO2 458
Fish Te	emperature p	Range Rela	tive Humidity	Range	CO2	Range # Occupants
327	72.2 <b>7</b>	2 - 78	55.9	30% - 60%	826	Max 700 > Ambient 2
Noticeable Odo	r No		/isible water age / staining?	Visible micro growth?	bial	Amount of material affected
Ceiling Type	2 x 4 Lay	ln	Yes	No		1 ceiling tile
Wall Type	Drywall/Pla	ster	No	No	[	None
Flooring	Vinyl		No	No		None
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	tive Action Required
Ceiling	Yes	No	No	Ro	emove a	and replace ceiling tile
Walls	Yes	No	No			
Flooring	Yes	No	No			
HVAC Supply G	rills Yes	No	No			
HVAC Return G	rills Yes	No	No			
Ceiling at Suppl Grills	y Yes	No	No			
Surfaces in Roo	m No	Yes	Yes		Clea	ın as appropriate
Dbservations						
Findings: - 1 stained ceiling - Dust build up on		surfaces throu	ghout the room	١		
Recommendatio	ns:					
Site Based Maint - Remove and rep - Thoroughly clea - Continue to mon appropriate	place stained ce n all surfaces th	nroughout the ro		owth as well as dust	t and del	bris accumulation and clean as
Physical Plant O - Evaluate cause	<b>perations:</b> of stained ceilir	ng tiles and repa	air as appropria	ate.		

McNab Elementary School

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March 20, 2008

Location Number
Evaluation Requested

	McNa	ab Elementar	y School			Evaluati	on Requested	March	20, 2008
Time of Day	1:00 pm					E	valuation Dat	March	27, 2008
Outdoor Condition	ns Tempe	erature 7	8.1	Relative Hu	midity	52.8	Amb	ient CO2	458
Fish Ten	nperature Ra	nge Rela	tive Humidity	Range		CO2	R	ange #	Occupants
328	74.1 <b>72</b>	- 78	52.7	30% - 60%		832	Max 70	00 > Ambien	t 2
Noticeable Odor	No		'isible water age / staining		e microl rowth?	bial	Amount of n		
Ceiling Type	2 x 4 Lay In		No		No			None	
Wall Type	Drywall/Plaste	er	No		No	[		None	
Flooring	Vinyl		No		No			None	
	Clean	Minor Dust / Debris	Needs Cleaning			Correc	tive Action	Required	
Ceiling	Yes	No	No						
Walls	Yes	No	No						
Flooring	Yes	No	No						
HVAC Supply Gri	IIs Yes	No	No						
HVAC Return Gri	IIs Yes	No	No						
Ceiling at Supply Grills	Yes	No	No						
Surfaces in Roon	n No	Yes	Yes			Clea	ın as approp	oriate	
bservations Findings:									
- No signs of water - Dust build up on e	intrusion or mic environmental su	robial growth urfaces throuເ	ghout the roor	n					
Recommendation	s:								
Site Based Mainte - Thoroughly clean - Continue to monit appropriate	enance: all surfaces thro			rowth as well	as dust	t and del	bris accumula	ation and clea	an as

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	Mo	Nab Elementar	y School		Evaluation	Requested	March	20, 2008
Time of Day	1:00 pm				Eval	luation Date	March	27, 2008
Outdoor Condi	itions Tem	perature 7	8.1	Relative Humidity	52.8	Ambie	nt CO2	458
Fish	Temperature p	Range Rela	tive Humidity	Range	CO2	Ran	ge #	Occupants
329	75.3 <b>7</b>	2 - 78	52.2	30% - 60%	950	Max 700	> Ambien	t 5
Noticeable Od	lor No	-	isible water age / staining	Visible micro growth?	obial Aı	mount of mat affected		
Ceiling Type	2 x 4 Lay	ln	Yes	No		2 ce	eiling tiles	
Wall Type	Drywall/Pla	ster	Yes	No		By tea	acher desk	
Flooring	Vinyl		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correctiv	e Action Re	quired	
Ceiling	No	Yes	Yes	Re	emove and	replace cei	ling tiles	
Walls	No	Yes	Yes	CI	lean with W	Vexcide disi	nfectant	
Flooring	No	Yes	Yes		Clean	and sanitiz	е	
HVAC Supply	Grills Yes	No	No					
HVAC Return	Grills No	Yes	Yes	CI	lean with W	Vexcide disi	nfectant	
Ceiling at Sup Grills	ply Yes	No	No					
Surfaces in Ro	oom No	Yes	Yes		Clean a	as appropria	ate	
hservations								

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**Location Number** 

# Findings:

- 2 stained ceiling tiles above teacher desk
- Staining on wall by teacher desk
- Dust and debris on HVAC return grills
- Dust build up on environmental surfaces throughout the room
- Throw rug in room

#### Recommendations:

#### Site Based Maintenance:

- Remove and replace stained ceiling tiles
- Wipe down walls thoroughly to remove stains
- Clean HVAC return grills with Wexcide disinfectant solution
- Thoroughly clean all surfaces throughout the room
- Use extraction machine to clean rug. If rug cannot be cleaned, please discard.
- 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 tiles and repair as appropriate.

	M	cNab Element	ary School		Evalua	tion Requested	March 2	20, 2008
Time of Day	1:00 pm	]				Evaluation Date	March 2	27, 2008
Outdoor Condi	itions Ter	nperature	78.1	Relative Humi	dity 52.8	B Ambie	ent CO2	458
	Temperature	Range Re	lative Humidity	Range	CO2	Ran	nge #	Occupants
332	72.9	72 - 78	55.3	30% - 60%	839	Max 700	> Ambient	4
Noticeable Od	lor No	] da	Visible water mage / staining	Visible n grov		Amount of ma	terial	
Ceiling Type	2 x 4 Lay	' In	No	No	<u> </u>		None	
Wall Type	Drywall/Pla	aster	No	No	<b>)</b>		None	
Flooring	Vinyl		No	No	<b>)</b>		None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corre	ctive Action Re	equired	
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 No	Yes	Yes		Cle	an as appropri	ate	
- Dust build up of Recommendat  Site Based Mai - Thoroughly cle		Il surfaces thro	ughout the rooi		dust and d	phrio gogumulati	on and alon	200
appropriate			9					

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	McN	lab Elementar	y School			Evaluati	on Requested	March	20, 2008
Time of Day	1:00 pm					E	valuation Date	March	27, 2008
Outdoor Condition	ons Temp	perature 7	<b>'8.1</b>	Relative Hu	midity	52.8	Ambie	nt CO2	458
Fish Ter	mperature Ra	ange Rela	tive Humidity	Range		CO2	Ran	ige #	Occupants
335	72.2 <b>72</b>	- 78	53.8	30% - 60%		706	Max 700	> Ambient	2
Noticeable Odor	No		/isible water age / staining		e microl rowth?	bial	Amount of ma affected	terial	
Ceiling Type	2 x 4 Lay Ir	n e	No		No	[		None	
Wall Type	Drywall/Plast	ter	No		No	[		None	
Flooring	Vinyl		No		No	[		None	
	Clean	Minor Dust / Debris	Needs Cleaning			Correc	tive Action Re	equired	
Ceiling	Yes	No	No						
Walls	Yes	No	No						
Flooring	Yes	No	No						
HVAC Supply Gr	ills Yes	No	No						
HVAC Return Gr	ills Yes	No	No						
Ceiling at Supply Grills	Yes	No	No						
Surfaces in Rooi	m No	Yes	Yes			Clea	ın as appropri	ate	
bservations Findings:									
- No signs of wate - Dust build up on	r intrusion or mi environmental s	crobial growth surfaces throu	ghout the roor	m					
Recommendation	ns:								
Site Based Maint - Thoroughly clear - Continue to moni appropriate	all surfaces thr			rowth as well	as dust	t and del	oris accumulati	on and clea	n as

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		McNab Elem	entary School		Evaluat	ion Requested	March 20, 2	2008
Time of Day	1:00 pm				I	Evaluation Date	March 27, 2	2008
Outdoor Cond	itions 7	emperature	78.1	Relative Humic	lity 52.8	Ambie	nt CO2 458	3
Fish  934  Noticeable Oc  Ceiling Type  Wall Type	66.9  dor No  2 x 4 L  Drywall/		Relative Humidity 56.6  Visible water damage / staining Yes	30% - 60% Visible m	th?	Amount of ma	> Ambient	3
Flooring	Vin		No	No	<u></u>		None	
Ceiling Walls	Clean Yes Yes	Minor D / Debri				ctive Action Re		
Flooring	Yes	No	No					
HVAC Supply	Grills Yes	No	No					
HVAC Return	Grills Yes	No	No					
Ceiling at Sup Grills	pply Yes	No	No					
Surfaces in Ro	oom No	Yes	Yes		Cle	an as appropri	ate	
bservations								
Findings:	na tile							

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**Location Number** 

# 0

- Dust build up on environmental surfaces throughout the room
- Temperature was low at the time of the assessment

#### Recommendations:

#### Site Based Maintenance:

- Remove and replace stained ceiling tiles
- Thoroughly clean all surfaces throughout the room
- Adjust thermostat to increase temperature
- 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 tiles and repair as appropriate.