

# managing risk with responsibility

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December 18, 2007 Signature on File

TO: Mr. Raymond LeFevre, Principal

Westchester Elementary School

FROM: Edward See, Project Manager

Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment

FISH 107, 108A-C, 113A, 130, 131, 132, 133,

136, 140, 142, 850, 853 and 860

	Custodial Issues Addressed
	Custodial Issues Not Addressed
_	
	Custodial Issues Not Addressed

On November 28, 2007 Aston Henry and I conducted an assessment of FISH 107, 108A-C, 113A, 130, 131, 132, 133, 136, 140, 142, 850, 853 and 860 at **Westchester 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

Sharon Airaghi, Area Director

Jeffrey S. Moquin, Director, Risk Management

Denise Cone, Project Manager, Facilities and Construction Management

Gary Itzkowitz, 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.

	Westc	hester Elementa	ry School		Evaluation	on Requested	November 14, 2007
Time of Day	11:00 am				Ev	valuation Date	November 28, 2007
Outdoor Cond	itions Te	mperature	34.5	Relative Humidity	58.8	Ambie	nt CO2 480
Fish  107  Noticeable Oc  Ceiling Type  Wall Type  Flooring	72.3  Ior No 2 x 4 La Drywall/Ta Carpe	72 - 78 dan	53.4 Visible water nage / staining	Range 30% - 60%  Visible micr growth'  No  No		Amount of mat affected	> Ambient 2
	Clean	Minor Dust / Debris	Needs Cleaning		Correct	tive Action Re	quired
Ceiling	Yes	No	No				
Walls	Yes	No	No				
Flooring	Yes	No	No				
HVAC Supply	Grills Yes	No	No				
HVAC Return	Grills					N/A	
Ceiling at Sup Grills	ply Yes	No	No				
Surfaces in Ro	oom No	Yes	Yes		Clea	n as appropri	ate
Observations							
Findings:							

2681

**Location Number** 

- False ceiling plenum was clean and dry
- Dust build up on environmental surfaces throughout the room
- CO2 level was slightly elevated at the time of the assessment
- FISH 104 (Mechanical Room) A/C filters not taped together
- FISH 110 (Custodial Closet) Water damaged wall and baseboard near slope sink and missing baseboard

# Recommendations:

#### Site Based Maintenance:

- Thoroughly clean all environmental surfaces throughout the room
- Ensure that A/C filters are taped together to prevent bypass
- Generate a work order through COMPASS to repair wall and baseboard in FISH 110
- 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 HVAC system for proper operation and repair as appropriate to lower CO2 level

	West	chester Eleme	ntary School		Evaluati	ion Requested	November 14, 2007
Time of Day	11:00 am				E	Evaluation Date	November 28, 2007
Outdoor Condi	tions T	emperature	84.5	Relative Humid	dity 58.8	Ambient	CO2 480
Fish <sup>]</sup>	Temperature	Range I	Relative Humidity	Range	CO2	Range	e # Occupants
108A-C	74.7	72 - 78	49.3	30% - 60%	1220	Max 700 >	Ambient 5
Noticeable Od	or No		Visible water damage / staining	Visible m grow		Amount of mater affected	
Ceiling Type	2 x 4 L	ay In	Yes	No		2 ceil	ing tiles
Wall Type	Tacka	able	No	No		N	one
Flooring	Carp	et	No	No	•	N	lone
	Clean	Minor Du / Debris			Correc	ctive Action Req	uired
Ceiling	No	Yes	Yes		Remove a	nd replace stain	ed tiles
Walls	Yes	No	No				
Flooring	Yes	No	No				
HVAC Supply	Grills Yes	No	No				
HVAC Return (	Grills					N/A	
Ceiling at Supp Grills	oly Yes	No	No				
Surfaces in Ro	oom No	Yes	Yes		Clea	an as appropriat	е
bservations							
- Dust build up o - CO2 level was	g tiles in roon on wall divider slightly eleva	ns and 1 staine s and on books	ed ceiling tile in ha	• , ,			
Recommendati	ons:						

2681

**Location Number** 

# Site Based Maintenance:

- Remove and replace stained ceiling tiles
- HFSP initiated a work order through COMPASS to investigate for active leak in hallway (011)
- Thoroughly clean wall dividers and bookshelves
- 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 HVAC system for proper operation and repair as appropriate to lower CO2 level

	wes	tchester Eleme	entary School		⊏valuati	ion Requested	November	14, 2007
Time of Day	11:00 am				E	Evaluation Date	November	28, 2007
Outdoor Condi	itions	Temperature	84.5	Relative Hum	idity 58.8	Ambie	nt CO2	480
Fish	Temperature	Range	Relative Humidity	Range	CO2	Ran	ige # C	Occupants
113A	72.2	72 - 78	57.7	30% - 60%	1549	Max 700	> Ambient	19
Noticeable Oc	lor No		Visible water damage / staining		microbial owth?	Amount of ma affected	terial	
Ceiling Type	2 x 4	Lay In	No	N	lo		None	
Wall Type	Cork/W	allpaper	No	N	lo l		None	
Flooring	12 x 12	2 Vinyl	No	N	lo l		None	
	Clean	Minor D / Debri			Correc	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		Clea	an as appropri	ate	

2681

**Location Number** 

#### **Observations**

#### Findings:

- Occupant complained of past odors. Plumbers detected sewer gas from dry sinks. Former Science classroom.
- Dust build up on environmental surfaces throughout the room
- CO2 level was slightly elevated at the time of the assessment
- FISH 149 (Mechanical Room) A/C filters not taped together in AHU 1, 3 and 4

#### Recommendations:

#### Site Based Maintenance:

- Ensure that water is run down sinks once a week to prevent sewer gas odor. Contact Physical Plant Operations to have drains capped if sinks are not going to be utilized.
- Thoroughly clean all environmental surfaces throughout the room
- Ensure that A/C filters are taped together to prevent bypass
- 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 HVAC system for proper operation and repair as appropriate to lower CO2 level

Time of Day	11:00 am				Eva	November 28, 2007
Outdoor Condit	ions Te	mperature 8	34.5 R	elative Humidity	58.8	Ambient CO2 480
Fish T	emperature	Range Rela	tive Humidity	Range	CO2	Range # Occupants
130	69	72 - 78	57.6 <b>3</b>	60% - 60%	1384	Max 700 > Ambient 1
Noticeable Odd	or No		/isible water age / staining?	Visible micro growth?		mount of material affected
Ceiling Type	2 x 4 La	y In	No	No		None
Wall Type	Drywall/Tad	ckable	No	No		None
Flooring	12 x 12 V	'inyl	No	No		None
	Clean	Minor Dust / Debris	Needs Cleaning		Correctiv	ve Action Required
Ceiling	Yes	No	No			
Walls	Yes	No	No			
Flooring	Yes	No	No			
HVAC Supply 6	Grills Yes	No	No			
HVAC Return G	rills Yes	No	No			
Ceiling at Supp Grills	ly Yes	No	No			
Surfaces in Roo	om Yes	No	No			
Observations						
Findings:						
<ul><li>Temperature was</li><li>Basket of stuffe</li></ul>			tly elevated at tl	he time of the ass	essment	
Recommendation	ons:					
- Continue to mo appropriate	are a source onitor this locati			o be cleaned freq wth as well as dus		s accumulation and clean as
Physical Plant C - Evaluate HVAC	Operations System for pro	oper operation ar	nd repair as app	propriate to increas	se tempera	ture and lower CO2 level

Westchester Elementary School

2681

November 14, 2007

**Location Number** 

**Evaluation Requested** 

-	Westch	ester Elementa	ry School		Evaluation	on Requested	November 14, 2007
Time of Day	11:00 am				E	valuation Date	November 28, 2007
Outdoor Condi	itions Ten	nperature	84.5	Relative Humidi	58.8	Ambie	nt CO2 480
Fish	Temperature	Range Rela	ative Humidity	Range	CO2	Ran	ge # Occupants
131		72 - 78	56.2	30% - 60%	1436		> Ambient 18
Noticeable Oc	lor No		Visible water nage / staining	Visible mid growth		Amount of mat affected	terial
Ceiling Type	2 x 4 Lay	In	No	No	] [		None
Wall Type	Drywall/Tac	kable	No	No	] [		None
Flooring	12 x 12 Vi	nyl	No	No	] [		None
	Clean	Minor Dust / Debris	Needs Cleaning		Correct	tive Action Re	equired
Ceiling	Yes	No	No				
Walls	Yes	No	No				
Flooring	Yes	No	No				
<b>HVAC Supply</b>	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: - Temperature v	was low and CO2	2 level was sligh	ntly elevated a	t the time of the as	ssessment		
Recommendat	ions:						
Site Based Mai	intenance:						
		on for any signs	of microbial g	rowth as well as d	ust and deb	oris accumulation	on and clean as
Physical Plant - Evaluate HVA		ner oneration a	nd renair as a	ppropriate to incre	ase temper	ature and lowe	r CO2 level
Evaluato	o oyotom for pro	por operation a	na ropan ao a	ppropriate to more	aco temper	ataro ana lowo	1 002 10101

2681

	Westche	ester Elementary	School		Evaluatio	n Requested	Novembe	r 14, 2007
Time of Day	11:00 am				Ev	aluation Date	Novembe	r 28, 2007
Outdoor Conditi	ions Tem	perature 84	4.5	Relative Humidity	58.8	Ambie	nt CO2	480
	emperature p	Range Relat	ive Humidity	Range	CO2	Ran	ge # (	Occupants
132	68.2	2 - 78	58	30% - 60%	1442	Max 700 :	> Ambient	17
Noticeable Odd	or No		sible water age / staining	Visible micro ? growth?		Amount of mat affected	erial	
Ceiling Type	2 x 4 Lay	In	Yes	No		1 cc	eiling tile	
Wall Type	Drywall/Tacl	cable	Yes	No		at m	nain door	
Flooring	12 x 12 Vir	nyl	No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correct	ive Action Re	quired	
Ceiling	No	Yes	Yes	R	Remove ar	nd replace sta	ined tile	
Walls	No	Yes	Yes		Repair/re	place as appr	opriate	
Flooring	Yes	No	No					
HVAC Supply G	Grills Yes	No	No					
HVAC Return G	Grills Yes	No	No					
Ceiling at Supp Grills	ly Yes	No	No					
Surfaces in Roo	om Yes	No	No					
hearvations								

2681

**Location Number** 

# Observations

#### Findings:

- Temperature was low and CO2 level was slightly elevated at the time of the assessment
- Stain on wall near main door and wallpaper/wall is peeling
- 1 stained ceiling tile

#### Recommendations:

# Site Based Maintenance:

- Remove and replace stained ceiling tile
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

- Evaluate HVAC system for proper operation and repair as appropriate to increase temperature and lower CO2 level
- Evaluate cause of stain on wall and peeling wallpaper and repair as appropriate. Repair/replace wall material as appropriate.

	Westch	ester Elementa	ry School		Evaluat	ion Requested	November 14, 2007
Time of Day	11:00 am				E	Evaluation Date	November 28, 2007
Outdoor Condi	itions Ten	nperature	84.5	Relative Humid	ity 58.8	Ambie	nt CO2 480
Fish	Temperature	Range Rela	ative Humidity	Range	CO2	Ran	ge # Occupants
133	69.4	72 - 78	56.6	30% - 60%	1414		> Ambient 19
Noticeable Oc	dor No		Visible water nage / staining	Visible mi growt		Amount of mat affected	terial
Ceiling Type	2 x 4 Lay		No	No			None
Wall Type	Drywall/Tac	kable	No	No			None
Flooring	12 x 12 Vi	nyl	No	No			None
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	ctive Action Re	equired
Ceiling	Yes	No	No				
Walls	Yes	No	No				
Flooring	Yes	No	No				
<b>HVAC Supply</b>	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: - Temperature v	was low and CO2	2 level was sligh	ntly elevated a	t the time of the a	ssessment		
Recommendat	ions:						
Site Based Mai	intenance:						
		on for any signs	of microbial g	rowth as well as	dust and de	bris accumulation	on and clean as
Physical Plant - Evaluate HVA		per operation a	nd repair as a	ppropriate to incre	ease tempe	erature and lowe	er CO2 level
Evaluato	o oyotom for pro	por oporation a	na ropan ao a	ppropriate to men	odoo tompo	rataro ana lowe	7 332 13731

2681

Westcheste	er Elementary School	Evalua	November 14, 2007
Time of Day 11:00 am	_		Evaluation Date November 28, 2007
Outdoor Conditions Tempe	rature 84.5	Relative Humidity 58.	8 Ambient CO2 480
Fish Temperature Rar	nge Relative Humidity	Range CO2	Range # Occupants
136 70.9 <b>72 -</b>	<b>78</b> 56.3	<b>30% - 60%</b> 1419	Max 700 > Ambient 19
Noticeable Odor No	Visible water damage / stainin	Visible microbial g? growth?	Amount of material affected
Ceiling Type 2 x 4 Lay In	Yes	No	1 ceiling tile
Wall Type Cork/Wallpape	er No	No	None
Flooring 12 x 12 Vinyl	No	No	None
Clean M	/linor Dust Needs / Debris Cleaning	Corre	ective Action Required
Ceiling No	Yes	Remove	and replace stained tile
Walls Yes	No No		
Flooring Yes	No No		
HVAC Supply Grills Yes	No		
HVAC Return Grills Yes	No No		
Ceiling at Supply Yes Grills	No		
Surfaces in Room Yes	No No		
Dbservations			
Findings: - Temperature was low and CO2 lev	vol was slightly alovated (	at the time of the accessmen	<b>*</b>
- 1 stained ceiling tile near clock	vei was slightly elevated a	at the time of the assessmen	ıı
Recommendations:			
Site Based Maintenance: - Remove and replace stained ceilin - Continue to monitor this location for		growth as well as dust and d	ebris accumulation and clean as

Physical Plant Operations
- Evaluate HVAC system for proper operation and repair as appropriate to increase temperature and lower CO2 level

appropriate

**IAQ Assessment** 

2681

	Westches	ter Elementar	y School		Evaluat	ion Requested	Novembe	er 14, 2007
Time of Day	11:00 am				E	Evaluation Date	Novembe	er 28, 2007
Outdoor Condi	tions Temp	erature 8	4.5	Relative Humidity	58.8	Ambie	ent CO2	480
Fish 140		- 78	57.4	Range 30% - 60%	<b>CO2</b> 1351	Rar Max 700	nge # > Ambient	Occupants 19
Noticeable Od	lor No		isible water age / staining	Visible micr ? growth?		Amount of ma affected	terial	
Ceiling Type	2 x 4 Lay In		Yes	No		3 c	eiling tiles	
Wall Type	Cork/Wallpap	er	No	No			None	
Flooring	12 x 12 Viny	I	No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	ctive Action Re	equired	
Ceiling	No	Yes	Yes	R	emove a	nd replace sta	ined 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 No	Yes	Yes		Cle	an as appropri	ate	
Observations								
Findings:								
I- CO2 level was	slightly elevated a	t the time of the	ne assessmer	nt				

2681

**Location Number** 

- Basket of stuffed animals in room
- Dust build up on environmental surfaces throughout the room
- 3 stained ceiling tiles

# Recommendations:

# Site Based Maintenance:

- Stuffed animals are a source of dust and allergens and need to be cleaned frequently
- Thoroughly clean all environmental surfaces throughout the room
- Remove and replace ceiling tiles
- 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 HVAC system for proper operation and repair as appropriate to lower CO2 level

	Westche	ster Elementar	y School		Evaluation	Requested	November	r 14, 2007
Time of Day	11:30 am				Eval	luation Date	November	r 28, 2007
Outdoor Condi	itions Tem	perature 8	4.5	Relative Humidity	58.8	Ambie	nt CO2	480
Fish	Temperature R	James Bala	tiva Urmiditu		CO2			2000000000
142	``	ange Rela 2 - 78	58.4	Range 30% - 60%	1262	Ran Max 700	ge # 0 > Ambient	Occupants 46
Noticeable Oc			isible water age / staining	Visible micro		mount of mat		
Ceiling Type	2 x 4 Lay I		No	No		unootou	None	
Wall Type	Tackable		No	No			None	
Flooring	Tile		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correctiv	e 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 Yes	No	No					
L Observations								
Findings: - No visible sign - 1 ceiling tile m	ns of microbial gro hissing s slightly elevated			nt				
Recommendat	ions:							
Site Based Maintenance: - Replace missing ceiling tile - 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 HVAC system for proper operation and repair as appropriate to lower CO2 level								

2681

	Westo	hester Elem	entary School		Evaluati	ion Requested	November 14, 2007
Time of Day	12:25 pm				E	Evaluation Date	November 28, 2007
Outdoor Condi	tions Te	emperature	84.5	Relative Humid	ity 58.8	Ambiei	nt CO2 480
Fish	Temperature	Range	Relative Humidity	Range	CO2	Ran	ge # Occupants
850	69.5	72 - 78	62	30% - 60%	841	Max 700	> Ambient 12
Noticeable Od	lor No		Visible water damage / staining	Visible mi g? growt		Amount of mat affected	
Ceiling Type	2 x 4 La	ay In	Yes	No		1 c	eiling tile
Wall Type	Dryw	all	Yes	Yes		South a	and East wall
Flooring	Tile		No	No			None
	Clean	Minor D / Debri		l	Correc	ctive Action Re	quired
Ceiling	No	Yes	Yes		Remove a	nd replace stai	ined tiles
Walls	No	Yes	Yes		Repair/r	eplace as appr	opriate
Flooring	Yes	No	No				
HVAC Supply	Grills Yes	No	No				
HVAC Return	Grills No	Yes	Yes		Clean wit	h Wexcide disi	nfectant
Ceiling at Sup Grills	ply Yes	No	No				
Surfaces in Ro	oom Yes	No	No				

2681

**Location Number** 

# **Observations**

#### Findings:

- 1 stained ceiling tile
- Visible signs of water intrusion and microbial growth on East and South walls (lower portion). Exterior walls show signs of peeling paint and water intrusion.
- Drywall within false ceiling plenum shows signs of water damage
- Temperature was low and humidity was elevated at the time of the assessment. Thermostat was set to 75 degrees.
- Dust and debris on HVAC return grills

#### Recommendations:

#### Site Based Maintenance:

- Clean HVAC 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

- Evaluate cause of stained ceiling tile and water damaged South and East walls and repair as appropriate. Evaluate exterior of portable (caulk, etc.) and repair as appropriate. Repair/replace drywall and ceiling tiles as necessary.
- Evaluate HVAC system for proper operation and repair as appropriate to increase temperature and lower humidity

	Westch	ester Elementa	ry School		Evaluation Reque	sted November 14, 2007
Time of Day	12:25 pm	]			Evaluation	Date November 28, 2007
Outdoor Condi	tions Ter	mperature	84.5	Relative Humidity	58.8 A	mbient CO2 480
Fish	Temperature	Range Rel	ative Humidity	Range	CO2	Range # Occupants
853	74.1	72 - 78	71.4	30% - 60%	1216 <b>Ma</b> x	x <b>700 &gt; Ambient</b> 29
Noticeable Od	lor Yes		Visible water nage / staining	Visible micro ? growth?		of material ected
Ceiling Type	2 x 4 Lay	/ In	Yes	Yes		1 ceiling tile
Wall Type	Drywa	II	No	No		None
Flooring	Tile		No	No		None
	Clean	Minor Dust / Debris	Needs Cleaning		Corrective Action	on Required
Ceiling	No	Yes	Yes	R	emove and repla	ce stained tile
Walls	Yes	No	No			
Flooring	Yes	No	No			
HVAC Supply	Grills Yes	No	No			
HVAC Return	Grills No	Yes	Yes	С	lean with Wexcid	e disinfectant
Ceiling at Sup Grills	ply Yes	No	No			
Surfaces in Ro	oom Yes	No	No			

2681

**Location Number** 

#### **Observations**

#### Findings:

- 1 stained ceiling tile
- Drywall within false ceiling plenum shows signs of water damage
- Temperature was low, humidity was elevated and CO2 level was slightly elevated at the time of the assessment
- Dust and debris on HVAC return grills

#### Recommendations:

# Site Based Maintenance:

- Clean HVAC 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

- Evaluate cause of stained ceiling tiles and water damaged drywall within false ceiling plenum and repair as appropriate.

  Evaluate insulation within false ceiling plenum and replace as necessary. Repair/replace drywall and ceiling tiles as necessary.
- Evaluate HVAC system for proper operation and repair as appropriate to increase temperature, lower humidity and lower CÓ2 level

Westchester Elementary School					Evaluation Requested November 14					er 14, 2007
Time of Day	5 pm		_			Eval	uation Date	Novemb	er 28, 2007	
Outdoor Cond	itions	Те	mperature	84.5	Relative H	lumidity [	58.8	Ambie	nt CO2	480
Fish	Tempera	ture	Range	Relative Humic	<sup>lity</sup> Range	C	CO2	Ran	ige #	Occupants
860	71.2	2	72 - 78	74.5	30% - 60%	<b>6</b> 1	1575	] Max 700	> Ambien	t 23
Noticeable Odor No			Visible wate damage / stain		ble microb growth?	oial An	nount of ma	terial		
Ceiling Type	2 x 4 Lay In		y In	Yes No		No	9 ceiling tiles			
Wall Type		Drywall		No		No		None		
Flooring		Tile		No		No			None	
	CI	lean	Minor D / Debri				Corrective	e Action Re	equired	
Ceiling		No	Yes	Yes		Ren	nove and	replace sta	ined tiles	
Walls		Yes	No	No						
Flooring		Yes	No	No						
HVAC Supply	Grills [	Yes	No	No						
HVAC Return	Grills [	No	Yes	Yes		Cle	an with W	excide dis	infectant	
Ceiling at Sup Grills	oply [	Yes	No	No						
Surfaces in R	oom [	Yes	No	No						

2681

**Location Number** 

# **Observations**

# Findings:

- 9 stained ceiling tiles
- Drywall within false ceiling plenum shows signs of water damage
- Temperature was low, humidity was elevated and CO2 level was slightly elevated at the time of the assessment
- Dust and debris on HVAC return grills

#### Recommendations:

# Site Based Maintenance:

- Clean HVAC 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

- Evaluate cause of stained ceiling tiles and water damaged drywall within false ceiling plenum and repair as appropriate.

  Evaluate insulation within false ceiling plenum and replace as necessary. Repair/replace drywall and ceiling tiles as necessary.
- Evaluate HVAC system for proper operation and repair as appropriate to increase temperature, lower humidity and lower CÓ2 level