

**J. W. Jones Elementary School
Microbial Remediation Protocol
Classrooms 101, 109, & 206
Removal Date: TBA
Clearance Date: TBA**

Mold Remediation Protocol

Location(s) of Remediation:

- The areas where the work will be performed are as follows: Classrooms 101, 109, & 206.

Estimated Quantities:

- The estimated quantities of materials and mold growth to be removed are greater than 25 contiguous square feet.

Underlying Cause:

- The initial source of moisture appears to be high relative humidity in the building caused by in improperly-working Heating, Ventilation, Air Conditioning (HVAC) system which is not removing humidity from the indoor air.

Remediation Methods:

The remediation activities shall consist of the following:

- The HVAC unit will be shut down at the time of the remediation in classrooms 101, 109, & 206.
- HEPA vacuum all furnishings and furniture in the room. Wipe down all non-porous surfaces with an approved fungicide.
- The Contractor, at his option, may utilize aerosols or additional equipment that he deems would be effective in the cleaning of the affected area. All cleaning solutions, disinfectants, other solutions and/or other equipment utilized to facilitate the remediation and cleaning operation will require advance written approval of the Consultant and copies of the MSDS for the product, prior to usage. The cost of repair of damages to the remediation area suffered as a result of the utilization of cleaning solutions, disinfectants, other solutions and/or equipment selected or used by the Contractor by will be the responsibility of the Contractor.
- There will be no visible microbial growth observed in the remediated areas at the completion of the project.

PPE:

- Disposable rubber gloves, N-95 respirator or half-face respirator with HEPA filter, disposable overalls, goggles/eye protection.

Initial PAR Date: 8-15-07

MEMORANDUM

August 14,

TO: Mr. Brian R. Flores, Principal
J. W. Jones Elementary School

FROM: Mr. Billy Sosa, Jr., Field Safety Representative
Risk Management Department

SUBJECT: **INDOOR AIR QUALITY (IAQ) INVESTIGATION – J. W. JONES ELEMENTARY SCHOOL – CLASSROOMS 206, 109, 110, 101, AND 202**

CONTACT: Darrell Wilson or Tony Rease:(713-220-5092)

On August 14, 2007, an indoor air quality (IAQ) investigation was conducted at J. W. Jones Elementary School in classrooms 206, 109, 110, 101, and 202. This investigation was conducted by Mr. Billy Sosa, Jr., of the Houston Independent School District's Risk Management Department based upon information submitted to Risk Management. The school is located at 1810 Stuart, Houston, Texas 77004.

Upon arrival at the school, Mr. Billy Sosa, Jr. signed in at the main office and met with the School Operator Ms. Marisela Gonzalez. Ms. Gonzalez and Mr. Sosa proceeded to classroom 206 to begin the investigation.

Observations:

1. At the time of the investigation, in classroom 206, visible microbial (mold) growth was observed on the closet doors, bulletin boards, and insulated pipes. The mold was in excess of 25 contiguous square feet on the bulletin boards and on the closets. (See photos 1-3 on page 4)
2. At the time of the investigation, in classroom 109, visible mold growth on the bulletin board was in excess of 25 contiguous square feet. (See photo 4 on page 5)
3. At the time of the investigation, in classroom 110, this classroom is being used for storing supplies. However, there is a strong odor of mold in this room. An area of less than 25 contiguous square feet was observed on the insulated pipes.
4. At the time of the investigation, in classroom 101, visible mold growth was observed on the spray on ceiling and on the closets. The mold was in excess of 25 contiguous square feet on both the spray on ceiling and the closets. (See photos 5-6 on page 5)
5. At the time of the investigation, in classroom 202, visible mold was observed on the student desks. The mold was less than 25 contiguous square feet.

Recommendations:

1. The recommended course for classroom 206 is have licensed mold remediation personnel remove the mold on the closet doors, bulletin boards, and insulated pipes since the mold is in excess of 25 contiguous square feet.
2. The recommended course of action for classroom 109 is to have licensed mold remediation personnel remove the mold on the bulletin board since the mold is in excess of 25 contiguous square feet.
3. The recommended course of action for classroom 110 is to contact HISD Maintenance Area 2 – Zone C to clean the ventilation unit thoroughly including, but not limited to filter, drain pan and lines, evaporator coils, vents and grills. School personnel remove the mold on the insulated pipes since it is less than 25 contiguous square feet. School personnel may wear personal protective equipment such as an N-95 respirator, goggles, rubber gloves, and protective clothing.
4. The recommended course of action for classroom 101 is to have licensed mold remediation personnel remove the mold on the spray on ceiling and on the closets since the mold is in excess of 25 contiguous square feet.
5. The recommended course of action for classroom 202 is for school personnel to remove the mold from the student desks since it is less than 25 contiguous square feet.

Air Monitoring:

The TSI IAQ-CALC instrument was used to document results for temperature, relative humidity, carbon dioxide (CO₂), and carbon monoxide (CO) in the area(s) listed above. The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) recommended parameters for temperature in an occupied space are 73-79 degrees Fahrenheit (Summer) and 74.5 degrees Fahrenheit (Winter). The ASHRAE recommended parameters for relative humidity in an occupied space is between 30% and 60%. CO₂ is considered an indicator of ventilation efficiency by ASHRAE and indoor measurements should not exceed 700 parts per million (ppm) greater than the outside environment. The carbon monoxide measurements were within the Environmental Protection Agency's National Ambient Air Quality Standards of 9 ppm over 8 hours or 35 ppm in one hour. At the time of the inspection, the room temperature, relative humidity, carbon dioxide (CO₂), and carbon monoxide (CO) measurements were as noted in the attached table on page 6 of this document.

Conclusion/Comments:

This is an IAQ investigation regarding concerns at J. W. Jones Elementary School. Its purpose is to determine the probable source of the IAQ problem and recommend to the campus principal possible solutions to the problems listed in the observations section of this document.

During the investigation, the Principal Mr. Brian R. Flores informed the investigator that the issue at J. W. Jones Elementary has been ongoing for several years now and has been checked numerous times but has never been corrected. At this time, it is believed that the ventilator units are not being properly operated and maintained. This may be the cause for IAQ problems in these classrooms and throughout the campus. During the investigation, classroom air temperatures were below normal and the relative humidity was above normal. Continuous high relative humidity inside the classrooms can cause mold to grow.

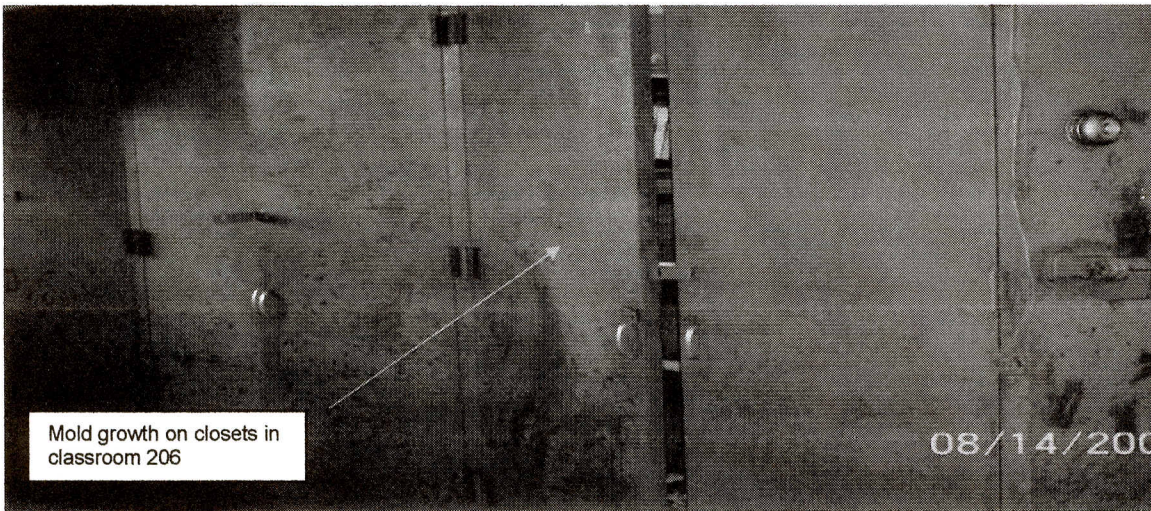
HISD Maintenance Area 2 – Zone C should be contacted again to determine the best way to achieve proper air temperature and relative humidity throughout the building.

According to Texas Mold assessment and Remediation Rules (2004) subchapter 295.303, a worker must be licensed under these rules in order to remediate any area of mold greater than or equal to 25 contiguous square feet. For more reading, go to www.dshs.state.tx.us/mold/rules.shtm.

Mold Assessment Technician License: # MAT
Expiration Date: 2-8-

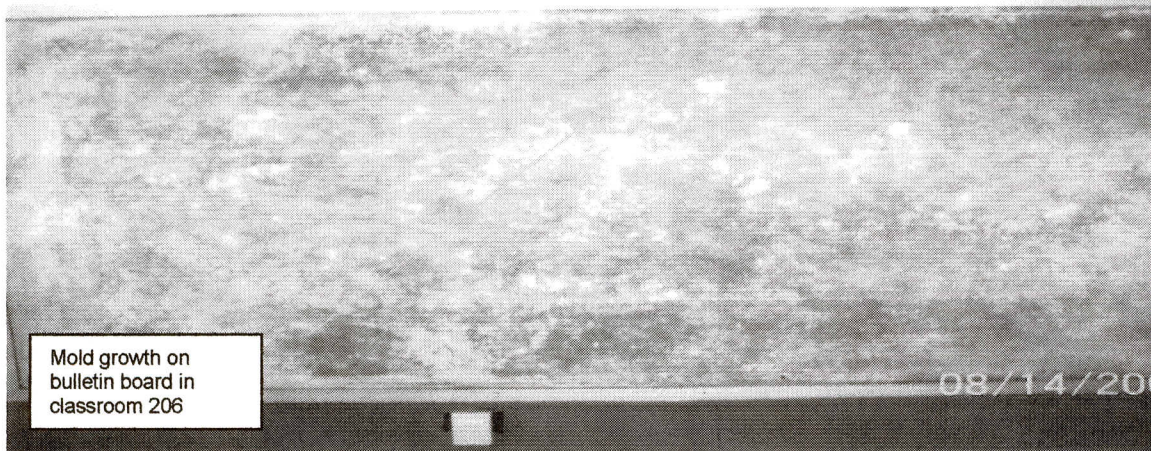
Mold Consultant License: # MAC
Expiration Date: 6-5-

cc: D. Wilson
A. Anderson
A. Hoskins
T. Coronado
A. Franklin



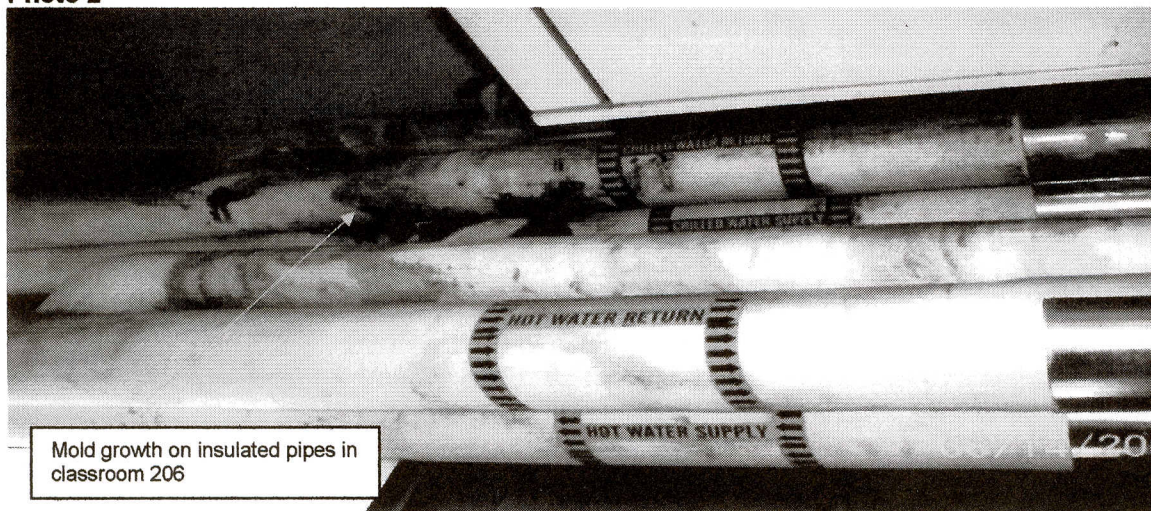
Mold growth on closets in classroom 206

Photo 1



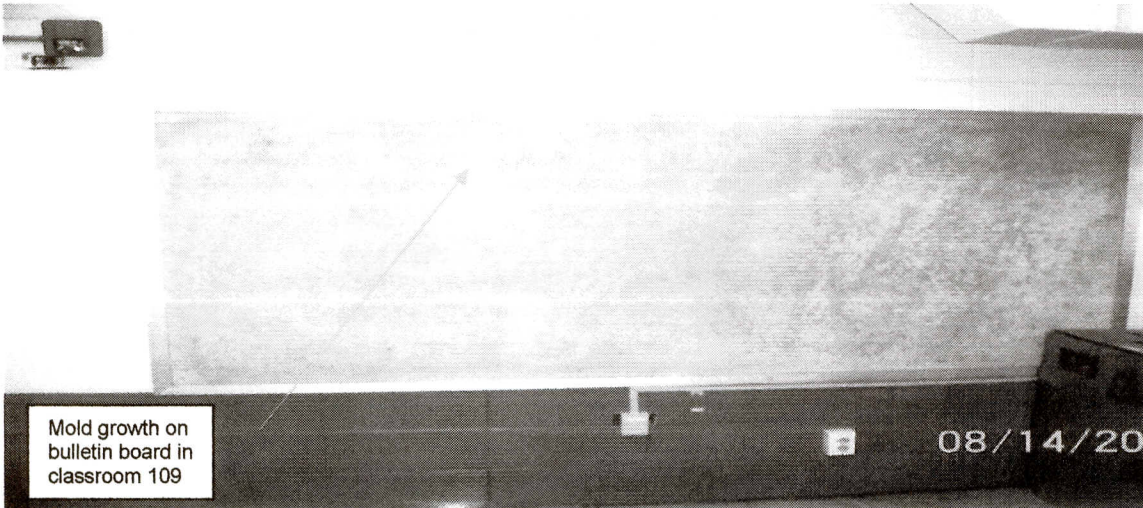
Mold growth on bulletin board in classroom 206

Photo 2



Mold growth on insulated pipes in classroom 206

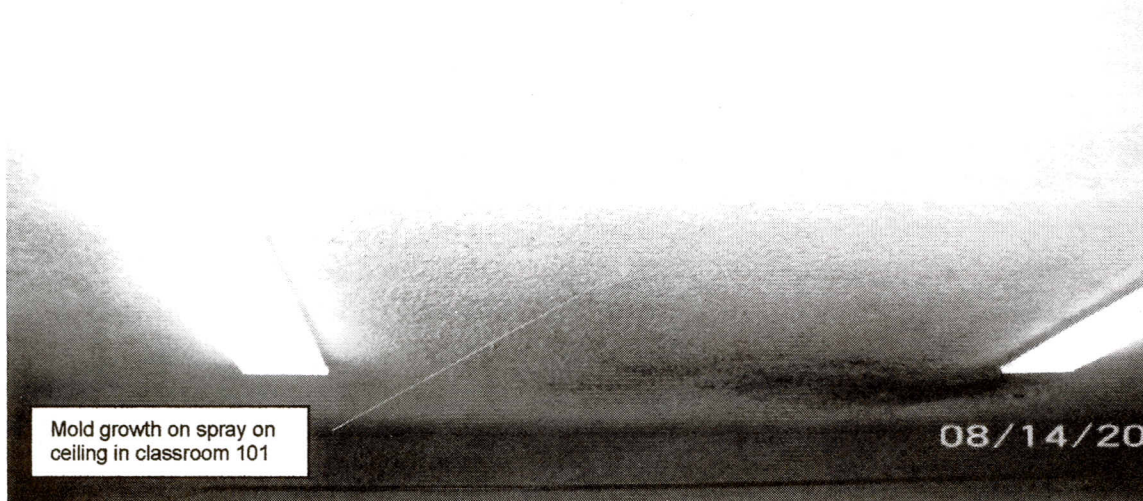
Photo 3



Mold growth on
bulletin board in
classroom 109

08/14/20

Photo 4



Mold growth on spray on
ceiling in classroom 101

08/14/20

Photo 5



Mold growth on closets in
classroom 101

08/14/20

Photo 6

**J. W. Jones Elementary School
 Classrooms 206, 109, 110, 101, and 202
 Indoor Air Quality (IAQ) Investigation
 August 14, 2007**

MODEL: 8762
 SERIAL: 01080150

Location	Time	Temperature °F (degrees Fahrenheit)	Relative Humidity % (percent)	Carbon Dioxide ppm (CO2 in parts per million)	Carbon Monoxide ppm (CO in parts per million)
Outside	8:42 AM	89.2	62	395	2.3
Classroom 206	8:56 AM	74.3	51.3	410	1.7
Classroom 201	9:03 AM	68.5	51	427	1.7
Classroom 109	9:09 AM	72.5	77.7	418	2.3
Classroom 110	9:19 AM	72.2	67.9	488	2
Classroom 101	9:32 AM	72	71.1	535	2
Classroom 202	9:35 AM	72.3	65.7	450	2

Air Quality Guidelines

Parameter	Limit/Range	Reference
Temperature	Summer 73°F to 79°F	ASHRAE Standard
	Winter 68°F to 74.5°F	55-1999
Relative Humidity	30% to 65%	ASHRAE Standard
		55-1992
Carbon Dioxide	700 ppm over outside level	ASHRAE Standard
		62-1999
Carbon Monoxide	8 hours TWA-9 ppm	EPA
	1 hour TWA-35 ppm	

Note: The bold numbers in the chart above indicate that the readings were either above or below the air quality guidelines.