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SEP 25 2014

Mary Long's Testimony

SC Court of Appeals

Page 9- Mr. Bannister asked me "Do you have any health problems?" and he asked "what are they?" I answered, "A lot of inflammation problems, myalgia, arthritis, very bad muscle problems, bone problems, and thyroid problems."

I could not think fast enough to mention that I have COPD, small air ways, very high metal in my body; I have metal toxicity that is causing a lot of problems. I could not think of all the health problems fast enough.

Mr. Bannister cut me off. He said "alright, I want you to go back to approximately 1983. What kind of problems did you have in 1983?" Alright, let me show you what's been marked really as exhibit, defendant's exhibit 1, dated February 14<sup>th</sup>, 1980, from Dr. C. Allen Bruce.

**Please see my testimony concerning Dr. Bruce and Dr. Goforth-Allergies.**

**These records will explain about the allergy problems.**

Mr. Bannister did not give the jury any of my medical records from the doctors, lab results, x-rays, etc. from after we were poisoned with several different poisons.

He didn't give my medical records showing these severe health problems that I am having since Tuck and Howell, The Trane Company and Steamatic of Greenville poisoned me with a lot of different poisons.

Mr. Bannister did not give this evidence to the jury. The jury did not see any of my medical records concerning after Tuck and Howell put the heat pump and ductwork in and after they had poisoned me with a lot of different poisons.

**\*These attorneys, Mr. Bannister, Mr. Walsh, and Mr. Harjehousen gave the jury my medical records from 33 years ago concerning only my allergies. They did not give any of my medical records to the jury from after I had been poisoned.**

The only medical problem Mr. Bannister, Mr. Walsh, and Mr. Harjehousen mentioned concerning Ray was that he is hearing impaired. Mr. Bannister did not give Ray's medical records to the jury from the doctors, lab results, x-rays etc. showing the severe health problems he is having since Tuck and Howell, The Trane Company and Steamatic of Greenville poisoned him with several different poisons.

Ray is part of this lawsuit. These attorneys treated him like he did not exist other than mentioning that he is hearing impaired.

They have treated us like we do not have any rights at all. We believe we were treated this way because we are seniors and also because Ray is hearing impaired. How could these attorneys treat us so badly?

**Please see the attached copies of the list of health problems.**

## Leak between Ceiling Tiles from a Storm

Mary Long- Direct Examination by Mr. Bannister; Starting with Page 14

In December of 2001, we had a leak between several ceiling tiles in our family room from a storm. Later we noticed a little discoloration in the crevices in between several ceiling tiles. We called someone out to do testing to see if it could be mold. It turned out we had a little mold between several ceiling tiles. There was between 1% and 5% in each of the three samples. We were also having an odor in this room. We thought at first the odor might be mold. When the man came out to do the testing he said that the odor wasn't coming from that small amount of mold. The ceiling tiles were the old tiles that were made of ground up cardboard. When these get damp, they have the wet cardboard odor. Even after they had dried out, they still had that odor. The restoration company said they could not spray them to get rid of the cardboard odor. They said they would have to remove them to get rid of the odor. At first the insurance company only wanted to remove the several ceiling tiles that had the mold between them. The tiles that had the mold were removed right away but the cardboard odor was still there. The restoration company had to argue back and forth with the insurance company about taking the ceiling down. The insurance company finally agreed to take all of the ceiling tiles, insulation, and plywood out and replace everything. The ceiling tiles, insulation and plywood were all removed and replaced with everything new. The odor went away as soon as they got this out of our home.

We were having problems with our insurance company not wanting to fix the ceiling correctly. My doctor wrote a letter to our insurance company to try to help us get the insurance company to fix the ceiling correctly. When they brought this up at our trial about the letter my doctor wrote to our insurance company to try to help us, I did not remember him doing this when they first brought this up at trial. I later remembered him doing this to try to help us.

**\*Please see this letter attached to these records.** He said "Mary Long has been followed in my practice for years. She had severe allergy problems in the 1980s. She has done well until recently. This appears to be secondary to mold and mildew problem in the ceiling of her den. If this can be repaired in a timely fashion this would be significant in preventing this patient continued medical problems. If you need further information, we will be happy to assist you. Sincerely, Dr. Goforth"

We went through all of this at my deposition. All of these attorneys already knew the truth about the rain leak between the ceiling tiles. I had already given them these records showing when this leak happened, what happened, when we had the testing done to see if it could be mold, the records of the test results, and the record of when the restoration company did the restoration work. Mr. Walsh told the jury that this happened in 2004 right before we had the new heat pump put in. This is not true. All of these attorneys know this happened in December 2001.

Mr. Bannister had all these documents proving this happened in December 2001. He had all the documents showing what happened, when it happened, the testing we had done to see if it could be mold, the test results and also when the restoration work was done to fix this. He could have spoken up and gave these documents to the jury to prove Mr. Walsh wasn't telling the truth about this. He just sat there and let the jury think I was lying about this.

Mr. Walsh and Mr. Harjehousen are alleging throughout our trial that we had mold in our home on November 11, 2004 when we had the new heat pump system and duct work put in.

They knowingly and intentionally lied about this. We had already been through all of this concerning the leak between several ceiling tiles in our family room at my deposition on April 15, 2009. Mr. Bannister

already had these documents before we had the deposition. I also gave these documents to Mr. Harjehousen at this deposition. When this came up at our trial, I told Mr. Harjehousen that I had already given him these documents at my deposition on April 15, 2009 and they explain when this happened, what occurred and when the restoration company fixed this. He sat there shaking his head "no" that I did not give him these documents. Later when we took a break I pulled these records out of my file of my deposition showing him that I did give him these records showing when this happened with the leak and these documents proved it was in 2001, not 2004, like they are saying.

We had already been through all this with both attorneys at my depositions. Attorney John Harjehousen and Mr. Bannister. They had already deposed me concerning the leak in between the ceiling tiles in our family room. I gave Mr. Harjehousen these documents on April 15, 2009. They had the documents showing that I was telling the truth about the leak and the small amount of mold. They took this into court at our trial and gave this to the jury making it look like we had mold in our home when we had the new heat pump system and duct work put in on November 11, 2004. They all knew the truth about what happened, when it happened, and when the restoration company had taken care of this.

See page 17-Judge Cole said to me, "You can't testify to what somebody else did or what they said, you can't testify to what somebody else did or test somebody else conducted, what their results were. That person will have to come testify so they can be examined just like you were".

The rain leak from a storm happened in December 2001. This was three years before we had the new heat pump system and duct work put in our home on November 11, 2004.

When we went to court for our trial on September 16, 17, 18, 2013 this would have been thirteen years since this happened with the rain leak from the storm.

\*There is no way these people can remember details of what happened at our home thirteen years ago from this storm.

\*We had all the documents from these people from 2001 proving how all of this happened. These attorneys were allowed to take this to court at our trial and give this to the jury but I was not allowed to give the jury these documents to prove what happened, when it happened, when the testing was done and the results from the testing, documents from the restoration company showing they removed all of the ceiling tiles, all the plywood, all the insulation and replaced everything new. I was not allowed to give these documents to the jury to prove I was telling the truth about this. They didn't want the jury to know the truth.

We believe Judge Cole and the attorneys were working together to keep these documents concerning the rain leak away from the jury. \*They did not want this cleared up.

These attorneys were planning to use this rain leak throughout our trial.

They were planning to bring this up with their witnesses throughout the trial.

They wanted the jury to hear about the rain leak over and over again. This is what happened, they heard about this over and over.

They had already prepared Sherman Woodson, a witness, to say a lot of things that were not true. \*He lied. Mr. Woodson said "I could see evidence of moisture intrusion that water could have come down through, you know, maybe the ceiling from the attic. It looked like almost around the chimney there had been a leak at one time. I saw a little bit of damage on the ceiling in places. Maybe a little bit of

wallpaper peeling. Some of the spray on material on the ceiling looked like it had kind of loosened in areas. Those are indicators of, you know, maybe a roof leak.”

**\*There is no way he could have known that we ever had a rain leak. These attorneys told him about the rain leak in 2001. There is no sign of a rain leak on the ceiling.**

The restoration company had taken out all of the ceiling tiles, all the plywood and all of the insulation and replaced everything new.

**\*We have a new ceiling.**

Mr. Woodson didn't see any damages to the ceiling. He was lying about this. These attorneys had told him about the rain leak from a storm in 2001.

**\*They paid him to say all these things. They paid him to lie. Mr. Woodson came out to our home in 2010 and 2011. This was 8 years after the new ceiling was put in.**

Concerning the estimates of the damages and losses

Mary Long directed by Mr. Bannister

Page 97: When Mr. Bannister was getting ready to ask me questions about our estimates for our damages and losses, the jury was asked to leave the room.

Page 99: Mr. Walsh said "There has been no builder disclosed. There is no builder on the witness list." The builder gave us the estimate on building our home back. If the builder was supposed to be there in court, then why did Mr. Bannister not tell him to come? Why did he not tell us? We would have told the builder ourselves. We were not aware that he was supposed to be there because he had given us an estimate. If Mr. Bannister knew this, then why did he not call him to court or tell us?

Page 102: Judge Cole called a recess. Judge Cole and the attorneys took our records for our damages and losses and left the court room together. We don't know what occurred at this recess meeting between them.

Page 103: When we went to trial, we had been out of our home for 8 ½ years. We have occurred a lot of expenses for this 8 ½ years out of our home. I put all my receipts in a box in order and once a year my daughter and I would total these receipts up for that year. All of this was in order as it happened.

Page 102, 104, 105: This happened after Judge Cole and the attorneys returned to the court room.

Pages 103, 104, 105: I told Mr. Bannister that the estimates he is presenting to the jury is not the estimates I gave him. There is a very long list of all the contents inside our home that we lost. We were only able to save very little of what was inside our home. There is something terrible going on here with our records of our damages and losses. We believe Judge Cole and the attorneys decided together at this recess that they would not give all of our estimates to the jury. It has cost us around a thousand dollars a month to live out of our home for 8 ½ years. It has been very hard on us having to live like this. We had remodeled and updated our home. We had a nice home to live in. Our rent is \$675.00 per month. The utilities are high; they run us between \$225.00 and \$300.00 per month. This is electric, water and sewer. We still have to keep our expenses paid at home. We still have the electric on at home. We have to keep the air on in the summer and heat on in the winter. We have been doing this for 8 ½ years. The law says we must do everything we can to keep the problems from getting worse. This is all we can do. No one had ever heard of these problems in a home before except the Trane Company. They have had this problem before with metal oxidation.

We have occurred a long list of expenses for being out of our home. Legal expenses, depositions and things like this. They have nowhere near counted all the expenses we have occurred from being out of our home for 8 ½ years. They have not counted all of our losses. They picked out a few estimates to present to the jury. They did not give the jury our total expenses. They picked out a few estimates to give them. We believe that Judge Cole and the attorneys were together on this. There is a lot of estimates they didn't give to the jury. They didn't count our total expenses. They picked out a few to give to the jury.

Leak in Ceiling Tiles from Storm

Mary Long-Cross Examination by Mr. Walsh

See Page 144 lines 20-25. Also see pages 145-151.

These records I pulled from my file are concerning the rain leak between several ceiling tiles in our family room from a storm. This is evidence to prove what happened concerning this.

\*These two records I pulled from my file was the record of when I had the testing done on December 13, 2001 to see if the discoloration between the ceiling tiles could be mold and this is also the test results I received back on December 28, 2001.

\*The other record I pulled from my file is the records from the restoration company showing they removed all the ceiling tiles, all the plywood and all the insulation and replaced everything new.

\*This is the same records that Judge Cole is referring to on Page 17 when Mr. Bannister was doing Direct Examination with me. Judge Cole told me I could not testify about these records. Please see page 17 concerning this.

\*When Mr. Walsh, Mr. Bannister and Judge Cole realized what these records were that I had pulled from my file, they had a bench conference between the three of them. This was held in the presence of the jury but out of hearing of the jury.

Judge Cole then asked the jury to please go to your jury room I've got one evidentiary matter I'll need to address and I'll bring you back in just a few minutes.

The following takes place outside the presence of the jury. See pages 145-151. This was outside the presence of the jury. The jury didn't hear any of this. They didn't want the jury to hear or see about these records of this evidence showing what happened, when it happened, when the testing was done, the results from the testing, and also the records from the restoration company showing they removed all the ceiling tiles, all the plywood, and all the insulation and replaced everything new. They didn't want the jury to see this evidence concerning the rain leak from the storm. They wanted the jury to think we was having these problems when Tuck and Howell put the new heat pump system and new duct work in our home.

See page 150. Mr. Bannister just sat there and kept quiet. He knew that he had these records and he also knew Mr. Harjehousen and Mr. Walsh also had these records. I had already given these records to Mr. Harjehousen at my deposition on April 15, 2009. Mr. Bannister already had these records also.

\*See page 150. Mr. Bannister asked for a restroom break. This was after they got my records. I don't know if they made a copy of my records while we were on break and put them with the exhibit that Judge Cole is referring to on page 151. These records would prove what happened concerning the rain leak from the storm and could clear all of this up. All of these attorneys already had these records and they had already deposed me concerning this on April 15, 2009. I thought all of this had already been cleared up about the rain leak from the storm at my deposition. They put me through all of this again while I was on the stand testifying going over this over and over again. They already knew the truth about this. The attorney didn't care what they put me through. I don't see how these attorneys can be so cruel.

**\*We believe Judge Cole and the attorneys were working together on not giving these records to the jury. Please see attached documents concerning the rain leak between ceiling tiles in our family room.**

Please notice there was only a very small amount of mold (between 1% and 5%) in the crevices between several ceiling tiles in our family room ceiling.

Mr. Bannister, Mr. Walsh and Mr. Harjehausen wanted to paint a picture in the jury's heads that this was a big mold problem. This is not true. This small amount of mold was confined to this small area. It did not even get out into the family room. It was confined in the crevices between several ceiling tiles.

They wanted the jury to think this was a big mold problem. They brought this out again and again throughout the trial with all their witness.

The attorneys all wanted this picture they had painted to stay with the jury throughout our trial.

Mr. Bannister said in the closing that a tree limb fell on the home and caused mold. This is not true. We did not have a tree limb to fall on our home. This was caused by a rain and wind storm. The wind blew some shingles loose on the roof and we had a rain leak.

Mr. Walsh objected to me giving these documents to the jury to get this cleared up.

He had planned to use this with all his witness throughout the trial. He wanted to keep this in the jury's minds throughout our trial.

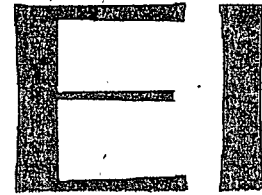
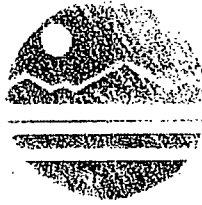
\* Please see Page 17 of the trial transcript.

Judge Cole told me that I can't testify to what somebody else did or what they said. You can't testify to what somebody else did or a test somebody else conducted, what those results were. That person will have to come testify so they can be examined just like you were.

These attorneys were telling the jury things that were not true but Judge Cole would not let me give the documents to prove what they were saying was not true.

Judge Cole said I would have to bring these people to court to testify but I could not give this evidence. This went on throughout the trial. I could not give any of my evidence

\* Mr. Bannister didn't get our witness to court to testify.



December 28, 2001

Mrs. Mary Long  
131 Taylor Road  
Grier, South Carolina 29652

Re: **Results of Sample Analysis**  
*Mary Long Residence*  
Grier, South Carolina  
EI Project No. 52-112-039

Dear Mrs. Long:

On December 12, 2001, EI representative David Brummitt visited your residence at 131 Taylor Road, Grier, South Carolina. The purpose of this visit was to collect at your direction microbial surface samples from within the residence. A total of three samples were collected during our visit: two samples were collected from crevices within the living room ceiling, and one sample was collected from the attic sub-floor (directly above the living room ceiling tiles). Surface microbial samples were collected using transparent adhesive tape, numbered consecutively, placed under chain-of-custody, and forwarded to Aerotech Laboratories for microscopic screening for environmental (non-viable) fungal spores.

The results of analysis indicated the presence of fungal spores (between 1% and 5%) in each of the three samples. Basidiospores were the predominant microorganism noted.

We are pleased to be of service to you. Should you have additional questions regarding the contents of this letter, please do not hesitate to call us at our Greenville office - (864) 239-6767.

Kindest regards,  
EI, Inc.

David L. Brummitt, OHST  
Director, Charlotte Operations

Attachment





# AEROTECH LABORATORIES, INC.

El, Inc.  
301 S. Tryon St., Suite 1200  
Charlotte, NC 28202  
Attn: David Brummit

AIHA Empat No. 102297  
Microscopic Screen and Fungi Identification  
Aerotech Method: S 001

Lab Number: A-112-1887  
Project Name: Mary Long Residence  
Project Number: 52-112-039  
Date Received: 12/13/2001  
Date Reported: 12/17/2001

Lab Number	1	2	3
Sample Identification	Living Room Ceiling	Living Room Ceiling (Corner Tiles)	Attic - Wood Ceiling Deck
Date Analyzed	12/14/2001	12/14/2001	12/14/2001
	<b>Results</b>	<b>Results</b>	<b>Results</b>
Mycelial Fragments	None Detected	None Detected	1-5 %
Fungal Spores	1-5 %	1-5 %	1-5 %
	<b>Fungal Spore Identification</b>	<b>Fungal Spore Identification</b>	<b>Fungal Spore Identification</b>
Alternaria			
Amerospores			
Arthrinium			
Ascospores	1-5%		
Aspergillus/Penicillium			
Aureobasidium			
Basidiospores	1-5%	1-5%	1-5%
Bipolaris/Dreschlera			
Botrytis			
Chaetomium			
Cladosporium			
Curvularia			
Epicoccum			
Fusarium			
Memnoniella			
Nigrospora			
Oidium/Peronospora			
Pithomyces/Ulocladium			
Rusts			
Smuts/Myxomycetes			
Stachybotrys			
Stemphylium			
Torula			
Unidentified Conidia			
Notes:			

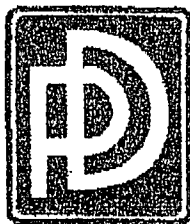
Prepared By: *ajol*

CS Review: *DT*

Technical Review: *BB*

Final Review: *Kevin Hinckley*

S001 Page 1 of 1



# PAUL DAVIS RESTORATION

## FACSIMILE TRANSMITTAL SHEET

TO: <i>Mary</i>	FROM: <i>Julie</i>
COMPANY:	DATE: <i>4-26-10</i>
FAX NUMBER: <i>879-7050</i>	TOTAL NO. OF PAGES INCLUDING COVER: <i>3</i>
PHONE NUMBER:	SENDER'S REFERENCE NUMBER:
RE:	YOUR REFERENCE NUMBER:

URGENT   
 FOR REVIEW   
 FOR ACTION   
 PLEASE REPLY   
 PLEASE RECYCLE

NOTES/COMMENTS:

*Per your request.*

1684 Old Hwy 14S, Greer, SC 29651

(864) 801-0018

(864) 801-3551 Fax

4/26/2010

Estimate 2234-P01  
 Estimate Date 02/20/03

Ms. MARY LONG  
 131 TAYLORS RD  
 GREER, SC 29651-5880



RE: 131 TAYLORS RD  
 GREER, SC 29651-5880  
 Loss Date: 6/5/2002  
 Claim Number:  
 Policy:

Ms. MARY LONG  
 131 TAYLORS RD  
 GREER, SC 29651-5880  
 Home: 877-7039

Dear Ms. MARY LONG:

**Living Room**

Main: L: 19' 0" W: 15' 9" H: 8' 0"

Ceiling Area	299.25
Ceiling Perimeter	69.50
Floor Area	299.25
Floor Perimeter	69.50
Wall Area	556.00

Task	Quantity	Unit	Price	Sub Totals
1. Acoustic ceiling tile	299.25	SF	1.98	593.71
2. Remove Acoustic ceiling tile	299.25	SF	0.26	77.81
3. Content Manipulation charge - per hour	4	HR	21.51	86.04
4. Haul debris - per pickup truck load - including dump fees	1	EA	82.01	82.01
5. Crown molding - Detach & reset	69.5	LF	1.30	90.52
6. Sheathing - plywood - 1/2" CDX	299.25	SF	0.88	263.34
7. Remove Sheathing - plywood - 1/2" CDX	299.25	SF	0.24	71.82
8. Batt insulation - 10" - R30	299.25	SF	0.86	287.13
9. Remove Batt insulation - 10" - R30	299.25	SF	0.22	65.84
10. Cleaning Technician - per hour	8	HR	22.72	181.76
11. Ceiling fan & light - Detach & reset	1	EA	89.47	89.47
12. Paint crown molding - one coat	69.5	LF	0.51	35.66
13. Mask and prep for paint	69.5	LF	0.70	48.48
14. Mask the floor per square foot	299.25	SF	0.12	36.36
15. Seal & paint paneling	556	SF	0.62	342.22

**Total for Living Room: 2,352.16**

	<u>Total</u>
Estimated Cost O&P	2,352.16
Overhead & Profit @ 20.28%	470.45
<b>Estimate Total</b>	<b>2,822.61</b>

*Paid in full 2/20/03  
 Check # 86507689  
 allstate insurance*

4/26/2010

Estimate 2234-P01  
Estimate Date 02/20/03



Ms. MARY LONG  
131 TAYLORS RD  
GREER, SC 29651-5880

RE: 131 TAYLORS RD  
GREER, SC 29651-5880  
Loss Date: 6/5/2002  
Claim Number:  
Policy:

Ms. MARY LONG  
131 TAYLORS RD  
GREER, SC 29651-5880  
Home: 877-7039

Dear Ms. MARY LONG:

The following is a recap of the totals for the above referenced claim. Thank you for allowing us to serve you.

	<u>Total</u>
Estimated Cost O&P	2,352.16
Overhead & Profit @ 20.28%	470.45
<b>Estimate Total</b>	<b>2,822.61</b>

Sincerely

JAMES A. COLLINS

Concerning Eric Burton's testimony and his report.

Pages 57-74

Please see page 63: Mr. Burton tells about the water from the condensate pump backing up inside the air handles and running into the supply plenum. See the list of the faulty installation done by Tuck and Howell. Please see their report on what he found.

Mr. Burton came out to our home three months after the original coils with the oxidation problems had been taken out of the heat pump system and replaced coils put in the same heat pump system that had the oxidation problem. They didn't replace the heat pump system. They only replaced the coils. It was also three months after Steamatic had tried to vacuum some of this mess out of the heat pump system and duct work. It was also three months after Steamatic had done the mold treatment.

It was also three months after we had been cleaning our home, vacuuming, damp mopping, damp dusting, over and over again. When we were doing all of this cleaning, we were being told by Tuck and Howell, their employees and Glenn Bell of The Trane Company, that these things in our home were not harmful. We found out later, after breathing this in for another three months, 24 hours a day, that they were all lying to us. We found out later from the doctors that this is very harmful.

When Mr. Burton came to our home, it had only been two weeks since we had left our home. We had been cleaning this up until the day we left our home. Mr. Burton did not see the big mess. He had certainly been told about all of it. That was the purpose of calling him out to check the heat pump system, duct work and everything from one end to the other. We had called to please come out and check everything to see if he could find out why we are having all these problems with this new heat pump system and duct work. We told him about all of the problems including the aluminum oxide powder dust, mold, the odors, and the refrigerant leaking out onto the coils and burning off the coils for three months in a row. WE told them about the dirt around our heat registers. We asked them to please try to find out what was causing all of our problems. WE also told them that we had been calling Tuck and Howell out over and over again for three months trying to get them to find out what was causing all of these problems. They couldn't find out what had caused these problems.

We also told them that we had left our home two weeks prior because we are both having severe health problems. They said that they would come out in a couple hours. We told them we would meet them at our home. Please see their report on what they found wrong with the faulty installations Tuck and Howell did at our home.

General Heating and Air found out what was causing all the damages that destroyed our home, our health and most everything in our home. \*All of this was caused by Tuck and Howell's faulty installation.

\*Please see General Heating and Air report on what they found wrong.

Page 107 lines 19-20: Mr. Walsh said to me "would it surprise you to know that you didn't even have a gas heater at that time?"

Line 21: I answered, "We did have gas."

Page 108 line 3: "So you think you had gas?" Mr. Walsh was trying to get me more upset.

Please see the records concerning the gas furnace. You will find this with the records concerning the leak in between the ceiling tiles. You will see that we did have a gas furnace.

Page 124 lines 15-16: Mr. Walsh said to me, "Before Mr. Burton came, you had your electrician out there didn't you?"

Line 17: I tried to explain; he cut me off.

Mr. Walsh is trying to point the finger at the electrician that we called out on January 16, 2006.

It was October 2005 when we returned home from vacation and found all these poisons in our home.

Three more months of calling Tuck and Howell out over and over again, trying to get them to find out what was causing all these problems with this new heat pump system and ductwork.

Three more months of Tuck and Howell continuing to cause more problems again and again.

Three more months of refrigerant leaking out onto the coils and burning off the coils because of their faulty installation. They made holes in the replacement coils while they were installing them.

During this same three months, Steamatic of Greenville poisoned us with microban treatment without our knowledge while we were inside our home breathing this. Tuck and Howell paid them to do this microban treatment. Tuck and Howell had already poisoned us for a year without our knowledge. They continued to poison us for another three months.

We left our home the last of December 2005 because we were having severe health problems.

On January 16, 2006 it had been two weeks after we left our home and we called other people out to try to help us find out what was causing all the problems with this new heat pump system and ductwork.

We called all these people out on January 16, 2006. We called all of them out on the same day.

Line 17: On January 16, 2006 we called our electric company to come out and see why our electric bills were so high. We told them that we had a new heat pump system and duct work put in our home earlier and we have been having a lot of problems with the new heat pump system. We told them about the refrigerant leaking out for three months in a row. The electric company said this is what was causing the high electric bills. He told me to call an electrician.

On January 16, 2006 I called the electrician. He came out shortly after I called. When he got there, I told him about all of the problems we were having from this new heat pump system and duct work. I also told him that we had been calling Tuck and Howell out for three months in a row and they were not taking care of the problems. I told him that every time they came out, the problems only got worse. They made holes in the replacement coils installing them. This was the three months they caused the refrigerant to leak out and burn off the coils. This is also when Steamatic poisoned us with the mold treatment. All of this happened in the same three months. The electrician didn't do anything. He told us that we should call another heating and air company to come out and do a diagnostic test on everything to try to find out what was causing all these problems.

On January 16, 2006 we called Eric Burton with General Heating and Air to come and do a diagnostic test on everything. All of this happened on the same day. They all came out on January 16, 2006. They found all the problems.

Page 129 Lines 11-15: Mr. Walsh said "Mr. Burton went out there a second time, a year later and again found the unit operational, running fine. He had offered no testimony about any problem that you've described that you thought was occurring about the dust, the smell and so forth?"

Lines 16-18: I said "If it was running fine then why did I call him out there? If it was running fine, then why was he out there in the first place sir? You're switching everything around."

Please see on page 73-74 what Mr. Burton had to say to Mr. Bannister about this same problem.

Lines 20-21: Mr. Bannister asked Mr. Burton "when the module goes out on the heat pump, what happens?"

Line 22: Mr. Bannister asks, "Does it stop functioning?"

Line 25: Mr. Burton asked "The module on the blowing motor?"

Page 74 line 1 Mr. Bannister said "yes sir."

Line 2: Mr. Burton responds "yeah, it causes it not to work."

Line 3-5: Mr. Bannister asked "so if this is the dead of winter and the blower doesn't work, there's gonna be no heat coming into the house is there?"

Line 6: Mr. Burton answered "Correct."

Line 7: Mr. Bannister asks "So you were sent to correct that?"

Line 8: Mr. Burton responds "yes sir."

Line 9-10: Mr. Bannister says "and you have no recollection of any conversation with Mrs. Long and Mr. Long or anyone else?"

Line 11: Mr. Burton responds "No, Sir".

Lines 12-13: Mr. Bannister asks "if they told you anything about their health, you just didn't note it and you don't remember it?"

Line 14: Mr. Burton: "Honestly, I do not recall."

Line 15: Mr. Bannister: "okay."

Line 16: Mr. Burton: "sorry."

\*Mr. Burton is saying the opposite to Mr. Bannister to what he said to Mr. Walsh.

Page 129 lines 22-25: Mr. Walsh said that Mr. Burton found no powder in the system. Please see Mr. Burton's report; it states they he found grey powder in the system.

After about three months of continuing to have problem after problem we called another heating and air company to come check all of the work that Tuck and Howell had done at our home.

We called General Heating and Air of Greenville, SC. They found many problems with the installation of the HVAC system and also problems with the duct work.

Please see their work order of the list of problems they found wrong with the HVAC system and duct work.

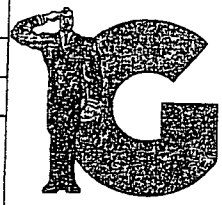
On the work order the writing is small and we had a problem reading it. They typed it up so it would be easy for us to read.

\*Please see all the problems General Heating and Air found wrong with the installation of the new HVAC system and duct work that Tuck and Howell had installed at our home.

---

56055

L#	PROPOSED WORK / DESCRIPTION	Qty	Regular Price	Agreement Price
	DIAGNOSIS FEE / TRIP CHARGE	1	85.00	
	MISCELLANEOUS		\$ 5.00	\$ 4.00
FR 1	<del>Installation Errors</del> Multiple return air leaks. Exposed			
FR 2	wood on par floor joist return. Float safety on condensate pump not			
FR 3	wired into receptical power by switch near crawlspace door. If turned			
FR 4	off like I found it, it cut off power to condensate pump allowing			
FR 5	water to back up inside air handler and run into supply plenum. I corrected this wiring.			
<b>TOTAL QUOTED PRICE</b>				



**General Air Conditioning Service Corporation**  
 5409 Augusta Road  
 Greenville, S.C. 29605  
 864-299-8979  
 FAX 864-299-6374  
 Web: www.generalac.com

Truck 140  
 Date 1-16-06  
 AR  
 WO# 116758

NAME Ray Long  
 STREET 131 Taylor Rd  
 CITY Greer STATE S.C. ZIP 29651  
 PHONE CONTACT

- SERVICE AGREEMENT
- NORMAL
- O.T.
- WARRANTY
- JOB
- 

**DESCRIPTION OF WORK**

Installed by another company. Due to several trips out and customer not happy they called us. Checked overall installation of system and duct work. Nick Maxwell is taking pictures and is addressing these concerns of mine. With the mechanics of system I found the blower speed set for 3 1/2 ton with a 3 ton heat pump. Set dip switches properly checked control wiring. Added 1 1/2 lbs of R-410A to suggested improvements unit to bring charge to manufacturer recommendation. Unit is operational at this time.

I HAVE THE AUTHORITY TO ORDER THE ABOVE WORK AND DO SO ORDER AS OUTLINED ABOVE. IT IS AGREED THAT THE SELLER WILL RETAIN TITLE TO ANY EQUIPMENT OR MATERIAL FURNISHED UNTIL FINAL & COMPLETE PAYMENT IS MADE. PARTS WARRANTY: All parts as recorded are warranted as per manufacturer specifications. LABOR GUARANTEE: The labor charge as recorded here relative to the equipment serviced as noted, is guaranteed for a period of 30 days. NO WARRANTY ON UNPAID BILLS.

APPROVAL TO PERFORM WORK  Mary M. Long

Qty	Parts / Materials	Whs / PO	Office
1 1/2	lbs, R-410A	TS	140



**PAYMENT INFORMATION**

CHECK \$ 221.60 No. 4255  
 CC# \_\_\_\_\_ EXP. \_\_\_\_\_  
 CASH \$ \_\_\_\_\_ AMEX.  DISC.  MC  VISA   
 CHARGE TO ACCOUNT - AUTH. No. \_\_\_\_\_

MAKE	TYPE	MODEL	SERIAL NO.	AGE
TR	HP	4TWX4036A1000AB	4423KAL2F	10/2004
TR	AH	4TEE3F40A1000AB	4224L381V	5/2004

Travel  
 Time Arrived: 115  
 Time Departed:  
 Travel Time: 12:30

**TERMS DUE UPON COMPLETION**

LABOR	AMOUNT
LABOR	85.00
Diagnost.	85.00
PARTS	49.14
TAX	2.46
<b>TOTAL AMOUNT DUE</b>	<b>221.60</b>

I WISH TO KEEP USED PARTS  
 x Mary M. Long x Eric Burton



**General  
Air Conditioning  
Service Corporation**

5409 Augusta Road  
Greenville, SC 29605  
864-299-8979  
Fax 864-299-6374

[www.generalac.com](http://www.generalac.com)

January 17, 2006

Ray Long  
131 Taylor Rd  
Greer, SC 29651

Re: HVAC System

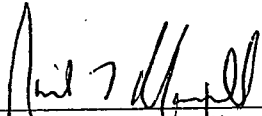
Mr. and Mrs. Long,

On January 16, 2006 our technician performed a service call at 131 Taylor Rd in Greer. What he found was the following; the condensate pump was wired to the light switch so when the light under the house was off so was the condensate pump. This caused the pump to back up and fill the supply plenum with water. At the time viewed there was no water in the plenum, but there was residue and a fine gray powder in the plenum.

He also found the dip switches on the fan to be set for a 3 ½ tons of air on a 3 ton system. He reset the dip switches properly and also had to add 1 ½ lbs of R-410 refrigerant to the system per manufactures recommendations.

At this time the system is operating properly although we did find several issues that need to be looked at and corrected. First of all the safety switch on the condensate pump is not tied in to stop the out door unit in case of pump failure. Second there is exposed wood inside the return, as well as air leaks that are allowing dirt to enter the system (see attached photos). Finally the customer complained of the return being extremely noisy. We found the return to be undersized and no to be internally lined which caused the system to operate loudly (see attached photos).

Please call with any question. 864-299-8979

  
\_\_\_\_\_  
Nicholas Maxwell,  
Team Manger

1-17-06  
Date

### Dr. Bruce and Dr. Goforth-Allergies

1983- Dr. Bruce- He is an allergy doctor I was seeing for allergies that I was having from strong odors. In 1983, he asked me to make a list of the things that had ever bothered me that I could think of. I gave him this list and I also kept a list for myself. He taught me how to avoid these strong odors and I would not have these allergies from the odors. I learned by avoidance of these odors that I would not have these allergy problems. If we painted a room inside our home or something like that, I would simply open the window and stay away from the painted room until the odor went away. It was that simple.

2006- I didn't see him again after 1983 until 2006 after we had the heat pump put in and also after we were poisoned with several different kinds of poisons. I had been working on avoidance of strong odors and I had been doing okay until we were poisoned. I went to see Dr. Bruce in 2006 hoping that he could do detoxification and get these poisons out of our body and to also help us in getting our immune system built back up. I had already been taking steroids and antibiotics from my family doctor. I had also been out of the home for several months but I was still having these health problems because these poisons are still in our bodies. These poisons didn't leave our bodies when we left our home.

**\*Please see my medical records from Dr. Bruce. He says in these records that he had not seen me since 1983 until 2006. He said I was able to get things under control by working on avoidance of allergens.**

**\*Please see these records from Dr. Bruce. This will help you to understand how this happened.**

These attorneys got this hand written list that Dr. Bruce had asked me to make of everything that had ever bothered me throughout my life. This list is with my medical records. I also had a copy of this for myself. The purpose of this was to show me how by working on avoidance of these allergens that I could prevent these allergy problems. I learned how to avoid strong odors and I would be okay.

These attorneys have taken these records and made it look like I have continued to have these problems for 33 years. This is not true. I learned how to prevent those allergy problems by avoidance of strong odors. This list of everything that has ever bothered me in my whole life will always be on my medical history records even though I don't have these problems with these things listed on my medical records anymore. I have learned to avoid these things and I will not have the allergy problem from them.

All of my doctors share my medical history with each other. Even though I am not going to these other doctors for this same problem. They get my medical history from my other doctors and add this to my medical history with them. This is to let them know about all of my health problems from all of my doctors. Even though I am not having these problems they are still on my medical records. The allergy problems will always be on my medical records.

These attorneys got all our medical records for the past 33 years. They saw on my medical records from 1982 and 1983 that I was having a lot of allergy problems from strong odors.

These attorneys are saying I have been having these allergies continually for 33 years. This is not true. I had gotten this under control by working on avoidance of the strong odors that bothered me and I had been okay.

This is the records they gave to the jury from 1982 and 1983 and told the jury that I continually had these allergy problems for 33 years. They had all my medical records for 33 years.

They didn't tell the jury about the many severe health problems we are having since Tuck and Howell, the Trane Company, and Steamatic of Greenville poisoned us with several different poisons. They only gave

the jury allergy problems I was having in 1982 and 1983. They had all these doctors' records concerning these severe health problems we are having since we were poisoned. They didn't want the jury to see these medical records after we were poisoned with several different poisons.

Mr. Walsh gave the jury medical records from 1982 and 1983. He went back to 1982 and 1983 and brought these records forward and is saying again that I had continually had these problems for 33 years. This is not true.

**\*Please see the medical records from Dr. Bruce.** He says in the consultation on July 27, 2006 that he hasn't seen me since 1983. She says after that she was able to get things under control by working on avoidance of allergens. She did well until about a year ago. This was after we had the heat pump put in and also after we had been poisoned with several different poisons.

**\*Dr. Bruce didn't have any medical records from 1983 until 2006 after we had the heat pump put in and also after we had been poisoned.**

Mr. Walsh told the jury that I continually had these problems for 33 years. You can see from Dr. Bruce's records that this is not true.

**\*Please see on page 153 of the trial transcript the letter Dr. Goforth, the ENT, wrote to our insurance company. The letter says she had severe allergy problems in the 1980s. Done well until recently. Appears to be secondary to a mold problem in the ceiling of her den.**

This was when we had the rain leak between the ceiling tiles from a storm. We were having problems with our insurance company not wanting to take all of the ceiling down and do this correctly. They only wanted to take out several ceiling tiles that had a little mold between them. They didn't want to remove all of the ceiling tiles. The ceiling tiles were made of ground up cardboard and when they got damp, they had the damp cardboard odor even after they had dried out. The insurance company only wanted to spray the ceiling to try to kill the odor. We had already taken the several ceiling tiles out that had the mold between them.

**\*Dr. Goforth was trying to help us get the insurance company to do this correctly and take everything out, not just the several ceiling tiles that had the mold between them.**

**\*Please see these records-Dr. Goforth, the ENT, said in these records on page 153 of the trial transcript that I had severe allergy problems in the 1980s. Done well until recently.** This was when we had the rain leak in the ceiling from a storm. He is saying I did well all these years with allergies until I had the flare up with the bad odors in the ceiling tiles.

**\*See the consultation with Dr. Bruce-Dr. Bruce the allergy doctor also said that I had allergies in the 1980s. He said in his consultation records that he had not seen me since 1983 until 2006. He also says she was able to get things under control by working on avoidance of allergens. He had not seen me since 1983 until 2006.** I went to him in 2006 after we had been poisoned with several different poisons. I was hoping he could also do a detoxification and get these poisons out of our body and also help us to get our immune system built up.

### Medical Records for 2001

On August 31, 2001 I was seen at Mountain View Family Practice. I saw Dr. Byars. I had an ear infection. This was 2001. He says on these records that I have spring and fall allergies (pollen in the spring and ragweed in the fall). I was given amoxicillin for the ear infection. I wasn't having allergy problems in 2001.

This office visit was four months before we had the leak between several ceiling tiles in our family room from the storm.

In December 2001 is when we had a rain leak between several ceiling tiles in our family room from a storm. We had some discoloration in the crevices between several ceiling tiles. We had testing done to see if this could be mold. It turned out we did have a very small amount of mold between several ceiling tiles. The test results showed there was between 1% and 5% mold between the ceiling tiles. We received the test results back on December 28, 2001; this was only three days way from being January 2002. This is the reason 2002 keeps coming up as the year this happened.

I had a flare up with allergies when we had this rain leak in the ceiling tiles in our family room from a storm. The ceiling tiles were made of ground up cardboard. When they got damp, they had the damp cardboard odor. Even after they had dried they still had the odor. I had a flare up with allergies until the restoration company took the ceiling tiles, plywood and insulation out and replaced everything new. The odor went away as soon as the ceiling tiles were out of our home. My allergy problem also went away as soon as the restoration was finished.

Please see Dr. Goforth's letter to our insurance company concerning our allergies.

Please see Dr. Bruce's consultation with me concerning allergies.

**MARY LONG**

Home: (864)877-7039

Female DOB: [REDACTED] 563048

Ins: MEDICARE (81)

\* 08/31/2001 - Office Visit: est. care / ear infection?  
Provider: William D Byars MD  
Location of Care: Mountain View Family Practice

### Office Visit

### History of Present Illness

**Chief Complaint:** est. care / ear infection

**History of Present Illness:** C/O headache associated w/ ?URI past wk, now having some drainage from L ear, perhaps minimal from right. Has seen J. Goforth in past for otitis media. No hx of tympanostomy tube.

### Past, Family, and Social History

**Past History:** Nasal surg 1980 hysterectomy 1975, ovaries intact.

**Social History:** No tobacco ever, no etoh.

### Review of Systems

**General:** Denies fevers.

**Cardiovascular:** No hx ht dis

**Respiratory:** Denies wheezing.

**Allergic/Immunologic:** spring and fall allergies, perhaps other times. Claritin and Allegra no better than OTC.

*This was 2001.*

### Vital Signs

Wt: 152 lbs. T: 97.0 deg F. T site: oral BP: 136/78

### Physical Exam

**General appearance:** well nourished, well hydrated, no acute distress

### Eyes

**External:** conjunctivae and lids normal

**Pupils:** equal, round, reactive to light and accommodation

### Ears, Nose and Throat

**External ears:** normal, no lesions or deformities

**External nose:** normal, no lesions or deformities

**Otoscopic:** Large ?chronic tm perforation on L, some drainage, slightly purulent.

**Nasal:** mild rhinitis, septum deviated.

**Pharynx:** tongue normal, posterior pharynx without erythema or exudate

### Neck

**Neck:** supple, no masses, trachea midline

**Thyroid:** no nodules, masses, tenderness, or enlargement

### Respiratory

**Respiratory effort:** no intercostal retractions or use of accessory muscles

**Auscultation:** no rales, rhonchi, or wheezes

### Cardiovascular

**Auscultation:** S1, S2, no murmur, rub, or gallop

**Carotid arteries:** pulses 2+, symmetric, no bruits

MFI Thornblade  
398 The Parkway Greer, SC 29650  
864-877-9577 Fax: 864-877-9073

April 29, 2010  
Page 2  
Chart Document

**MARY LONG**

Female DOB: [REDACTED] 563048

Ins: MEDICARE (81)

Home: (864)877-7039

**Lymphatic**

Neck: no cervical adenopathy

**Skin**

Inspection: a few small eryth lesions, ?folliculitis.

**Mental Status Exam**

Orientation: oriented to time, place, and person

Mood and affect: no depression, anxiety, or agitation

**Assessment**

**New Problems:**

OM, ACUTE SUPPURATIVE NOS (ICD-382.00)

Comments: A- see dx.

P see med. sched. cpx.

**Plan**

**New Prescriptions/Refills:**

AMOXICILLIN 500 MG TAB 1 or 2 tid 08/31/2001 #72 : William D Byars

**Updated Medication List:**

AMOXICILLIN 500 MG TAB (AMOXICILLIN) 1 or 2 tid

**New Orders:**

OV New Detailed Level III 99203 [CPT-99203]

Future - Hemoccult, Colorectal Cancer Screen - Medicare Dx V76.41 [G01070]

Future - Health Screen/Lipids [CPT - 80053,80061]

Future - Thyroid Ranel & TSH [CPT84479,84443,84436]

Future - Urinalysis [CPT - 81000]

**Medical Decision-Making**

**Amount/complexity of data to be reviewed**

\* review/order other diagnostic or tx interventions

**Risk of complications:** moderate

**Prescriptions:**

AMOXICILLIN 500 MG TAB 1 or 2 tid 08/31/2001 #72 x 0

Entered, Authorized and Signed by: William D Byars

Method used: Print then Give to Patient

Signed by William D Byars, MD on 09/04/2001 at 7:42 PM

Patient: Mary M. Long (# 33510) DOB: [REDACTED]  
Type: Outgoing Physician Letters  
Doc Date: 12/16/02  
Caregiver: Dr. Augustus J. Goforth III  
Encounter: <Unmatched>  
Page: 1



December 16, 2002

RE: MARY LONG  
DOB: [REDACTED]

To Whom It May Concern:

Mary Long has been followed in my practice for years. She had severe allergy problems in the 1980s. She has done well until recently. This appears to be secondary to a mold and mildew problem in the ceiling of her den. If this can be repaired in a timely fashion, this would be significant in preventing this patient continued medical problems.

If you need further information, we will be happy to assist you.

Sincerely,

A. J. Goforth, III, MD

AJG:tlb

ADULT AND PEDIATRIC ENT • ADULT AND PEDIATRIC SINUS CARE  
A.J. Goforth, III, MD • Ronald E. Yoko, MD, FACS  
Sherman A. Stevenson, MD

SPECIALIST IN PEDIATRIC ENT • PEDIATRIC AND ADULT SINUS CARE  
David S. Parsons, MD, FAAP, FACS

131 Commonwealth Dr., Suite 230, Greenville, SC 29615 • (864) 281-9440 fax (864) 281-9443  
Hillcrest Community Hospital, Simpsonville, SC 29681 • (864) 967-6200 fax (864) 967-6285  
556-D Memorial Drive Ext., Greer, SC 29651 • (864) 848-9451 fax (864) 848-3625



7 Memorial Medical Dr. Greenville, SC 29605-4407  
Telephone 864-295-2492 Fax 864-295-2494

DOB: ~~01-12-02~~

MARY LONG  
131 TAYLOR ROAD  
GREER, SC 29651  
ID# 28564

JULY 27, 2006  
CONSULTATION

Mary Long, a 63-year-old female, is seen today in consultation having been previously seen here, the last time in 1983. She says that after that she was able to get things under control by working on avoidance of allergens. She did well until about a year ago. She says that she had a new heat pump put in and shortly after that she started smelling an odor like something was burning. She says that she then started smelling an old moldy odor. This went on with through checking of the house. Finally in the last of October, last year, white powder started blowing out of the duct work. She says that they called the people out who put the heat pump in and they came out. She says that they told her that the odor was what they call the stinky socks syndrome. She says that they had no idea what the powder was but they called the Trane company who told her that the powder was aluminum oxide. The heat had oxidized this and caused the odor and the powder. She says that they came out, vacumed out all the ducts and put in coated coils. She says that they did not install these properly and there was a refrigerant leak, and they fixed a hole because the burning of the leak was causing an odor. Another leak was found in November and the stuff was burning again. She says that they had the same problem in December and the refrigerant was burning and causing a terrible odor. She says that in January they called another company to come in to do a diagnostic test. At that time they found out that there were more problems. The water was not running out of the unit, but was backing up in the unit and mold was caused. The pump was on the same switch as a light and when it was turned off the pump did not work. She says that they found other problems. The second company wired up the equipment properly, but they continued to have the dust problem of the aluminum oxide and they still saw small particles floating over the house. She says that she requested the unit to be changed. She says that they called in an environmentalist and had a report done. They found a significantly high level of Cladosporium as compared to the outside of 480 for Cladosporium. This was in the back room which is over the heat pump. Also noted was a high count in a guest bedroom where the Cladosporium count was 1530. She had another study done and showed elevated levels of aluminum oxide. She says that because of these problems she has not been able to live in her home since January of this year. She says that she is going to have to have this all replaced. She is interested in getting her immune system built up. She says that she gets short of breath still, has been on steroids, antibiotics but still has not felt well despite being out of the house for several months. She says that she has been to the emergency room one time with a flare up while still in the house.

EAST BUTLER  
1202 E. Butler Road  
Greenville, SC 29607  
P.O. Box 27129  
Greenville, SC 29616-2129  
Telephone 864-627-3800

C. Allen Bruce, M.D.  
Emmanuel U. Sarmiento, M.D.  
Neil L. Kao, M.D.  
Candace A. Cothran, P.A.-C  
Jacqueline Gibbons, P.A.-C  
Samantha Draper, P.A.-C

SPARTANBURG OFFICE  
3020 Reidville Rd.  
Spartanburg, SC 29301-5641  
Telephone 864-699-4870  
Fax 864-699-4874



7 Memorial Medical Dr. Greenville, SC 29605-4407  
Telephone 864-295-2492 Fax 864-295-2494

MARY LONG  
131 TAYLOR ROAD  
GREER, SC 29651  
ID# 28564

AUGUST 11, 2006  
OFFICE NOTE

Mary Long is seen today in follow-up. She is here for follow up. She says that she did fine the day she was tested while here, but started an hour or so later with headache and felt like that she had the flu. She says that she got real stiff all over that night and when she got up to go to the bathroom she was stiff and could hardly walk. She says that her skin was sore. She did not take her temperature, but was having chills. She says that she got under a comforter and took Benadryl every four hours which helped a little and then also took her Allegra. She says that she still feels the effects of it. She says that for a week she did not get out of the house and had to stay under the air conditioning. She reports that when she lies on her side she feels like her breath is cut off. She says that the Allegra is not helping as well as it did and seems to run out in five hours or so.

The current medications are Allegra, Mucinex, Cough Drops, Tylenol.

EXAM TODAY revealed the weight to be 139 lbs. (63.04 kg.), height 165.5 cm. (65.16"), temp 98.1, blood pressure 124/72, pulse 60, and respiratory rate 12. HEENT exam revealed the nasal mucosa to be pink with 25% airway obstruction present on the right and on the left to be pink with 25% airway obstruction present. Sinuses transilluminated well. Conjunctiva, throat, and ears were clear. Lungs were clear on auscultation.

NASAL SMEAR showed 60% polys and 40% epithelial cells from the right and from the left 40% polys and 60% epithelial cells were seen.

PULMONARY FUNCTION TESTS were performed before and after inhaled Xopenex 1.25 mg via nebulizer and showed the forced vital capacity was 2.19 liters per second (71.67%) before bronchodilator and 2.16 liters per second (70.83%) after inhaled bronchodilator. FEV I was 2.05 liters per second (85.73%) before bronchodilator and 2.13 liters per second (89.01%) after inhaled bronchodilator. FEF 25-75 was 3.45 liters per second (150.29%) before bronchodilator and 4.04 liters per second (175.92%) after inhaled bronchodilator. Peak flow was 5.45 liters per second (96.08%) before bronchodilator and 6.51 liters per second (114.61%) after inhaled bronchodilator. My impression of the spirogram is that it reveals mild restriction and no change with bronchodialater. Decreased from previous

\* except small airways.

EAST BUTLER  
1202 E. Butler Road  
Greenville, SC 29607  
P.O. Box 27129  
Greenville, SC 29616-2129  
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SPARTANBURG OFFICE  
3020 Reidville Rd.  
Spartanburg, SC 29301-5641  
Telephone 864-699-4870  
Fax 864-699-4874

**Best 3 PRE-MEDICATION FVC Tests**

**Patient Information**

**Id:** 28564      **Name:** Long, Mar   **Phone:**  
**Address:**      **City:**      **State:**      **Zip:**  
**Ethnic:** Black      **Gender:** Female      **Height:** 5' 4"      **Weight:** 139      **Age:** 63

**Date:**  
 08/11/2006 13:51:37

**Last Calibration Date:**  
 08/11/2006 08:05:19

Normal Used: Knudson/IMTS

MILD RESTRICTION

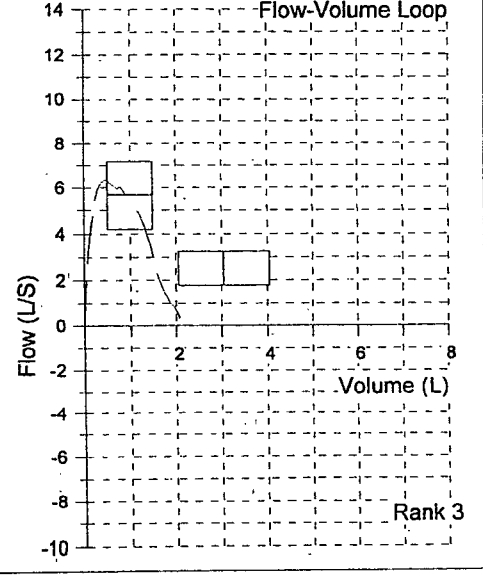
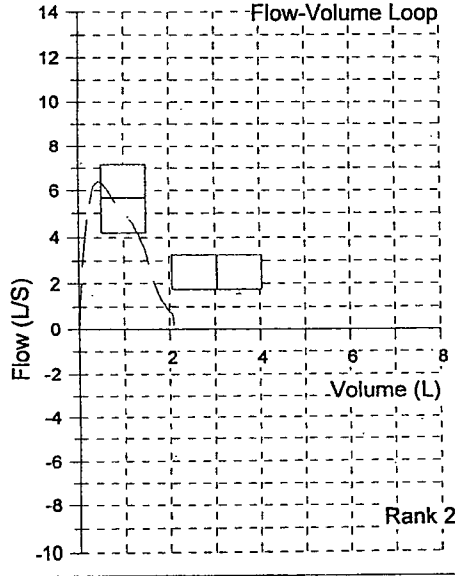
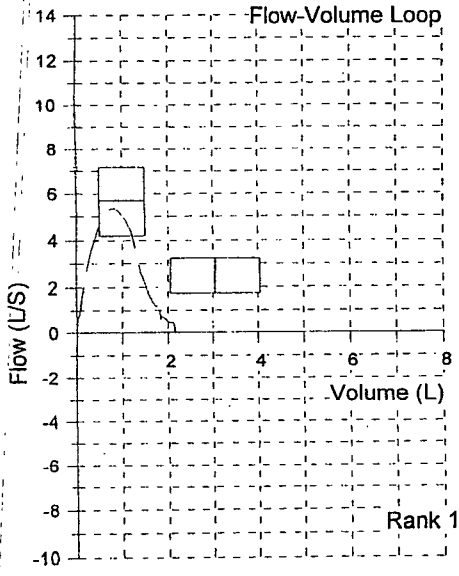
MILD RESTRICTION

MILD RESTRICTION

**BEST PRE TEST**

**2nd BEST PRE TEST**

**3rd BEST PRE TEST**



Expiratory	Actual	Predicted	% of Pred
FVC	2.19 L	3.05 L	71.67 %
FEV 1.0	2.05 L	2.39 L	85.73 %
FEV 3.0	2.18 L	2.84 L	76.56 %
FEV 1.0/FVC	93.69 %	78.33 %	119.61 %
PEF	5.45 L/S	5.68 L/S	96.08 %
FEF25-75%	3.45 L/S	2.29 L/S	150.29 %
FEF75-85%	0.97 L/S	0.60 L/S	161.52 %

Actual	Predicted	% of Pred
2.10 L	3.05 L	68.79 %
2.09 L	2.39 L	87.50 %
2.10 L	2.84 L	73.74 %
99.63 %	78.33 %	127.20 %
6.84 L/S	5.68 L/S	120.54 %
4.52 L/S	2.29 L/S	196.94 %
1.89 L/S	0.60 L/S	313.85 %

Actual	Predicted	% of Pred
2.08 L	3.05 L	68.22 %
2.08 L	2.39 L	86.97 %
2.08 L	2.84 L	73.24 %
99.85 %	78.33 %	127.48 %
6.48 L/S	5.68 L/S	114.19 %
4.74 L/S	2.29 L/S	206.43 %
1.82 L/S	0.60 L/S	302.09 %

*From previous  
 X small airways  
 visit  
 8/11/06*

*Do post Xopenex 1.25  
 cs*

### Concerning 2002, 2003, 2004 Medical Records

When I got my medical records from Dr. Brunson at Mountain View Family Practice, my 2002 and 2003 medical records were missing from my records. I asked why my medical records from 2002 and 2003 were missing. Dr. Brunson said it may be because they had not started putting medical records in the computer. He said they were probably hand written medical records and probably filed away in storage.

I didn't pick up on this at the time, but my 2001 medical records were there, so why wasn't my 2002 and 2003 medical records there also?

These 2002 and 2003 missing records are the records concerning the rain leak between several ceiling tiles and also the records about the sensor leak on the gas furnace on December 4, 2001.

While looking at my 2004 medical records on June 28, 2004 I found where Dr. Brunson had brought these missing records forward from 2002 and 2003 and added them to my medical record for June 28, 2004. He is making it look like we were having these problems on June 28, 2004 with the leak in the roof from a storm. This happened in 2001. It wasn't 2004. We had the testing done on December 12, 2001. It was only three days away from being January 2002 when we received the results back from the testing. This is the reason 2002 keeps coming up as the year we had the leak.

When Dr. Brunson brought my missing 2002 and 2003 medical records forward and added them to my medical records on June 28, 2004 he is making it look like we were having these problems on June 28, 2004.

Please see the documents proving when it happened, when the testing was done to see if it could be mold, the results of the testing and also when the restoration company fixed it.

When I was getting my medical records together in order by the year and date of before 2004 when we had the new heat pump system and duct work put in. I started seeing why my 2002 and 2003 medical records were missing. Someone did this on purpose. My 2002 and 2003 medical records that were missing were then taken forward and added to my medical records on June 28, 2004 making it look like I was having these problems on June 28, 2004 that was on my 2002 and 2003 medical records.

This was brought forward to June 28, 2004 to make it look like we were having these problems on June 28, 2004.

Tuck and Howell's attorney are the ones that called Dr. Brunson and spoke with him about the lawsuit against Tuck and Howell. They are the ones that made the arrangements to deposition him. Mr. Harjenhouse is the one that did the deposition with Dr. Brunson. Tuck and Howell may do Dr. Brunson's heating and air work.

Someone did this on purpose to make it look like these problems with the rain leak from the storm and also the sensor leak on the gas furnace was occurring on June 28, 2004.

**(THIS IS A COPY OF NOTES THAT I TOOK TO DR. BRUNSON AFTER HIS DEPOSITION ALONG WITH COPIES OF THE TEST AND THE INVOICES SHOWING WHEN THE WORK WAS DONE.)**

**Notes for Dr. Brunson**

My medical records are all mixed up.

2004

The first four visits of these records are for the same problems: chest pain, tightness in chest (when I lie down I got worse), vomiting after eating, nausea. I was having several symptoms of reflux. I was not eating well because food made me worse. The medicine that I was taking at first was only making me worse. I was taking amoxicillin and using Advair which was making my problems worse.

When I wore the halter monitor for 24 hours, I was in a lot of pain and I tried taking Tums off and on throughout the night and found this to help with the pain and tightness. When I came back for another visit with you, I told you that I had taken Tums and it helped me some. I told you that I thought I might be having reflux problems and asked you to give me something for reflux. You gave me Nexium for two months and I did fine with these problems as long as I was taking the Nexium. After I ran out of the Nexium, I started having the pain, tightness and nausea again. I came back to see you again and asked you for a refill on the Nexium. I had gotten so bad before I got on the Nexium that 2 months of it was not enough to heal the problem. You then gave me 5 refills on the Nexium. After taking this, it healed the reflux problem.

6/28/2004

On the records of this office visit you brought up mold problems from past records. I was there on this office visit for the same problem with reflux again. I had ran out of the Nexium and needed to get additional refills. I was not having mold problems. All of these visits in 2004 were for the same problems. Please notice that on all of the first four office visits, my chief complaints were discomfort, chest tightness. I was having reflux all the time from 2/6/04 until 6/28/04.

8/17/04

On the last visit dated 8/17/04, I saw Dr. Hudson. I had a bad cold, congestion, fluid in ears. He also brought up mold problems. He refers to Dr. Brunson's previous notes about mold problems and wrote this down again in the notes for this office visit.

The mold problem that I mentioned that was in our ceiling keeps being brought forward from a previous visit and added to my health problems that are being reported later on. I had no idea that making a comment about our problems would put me through so many more problems at a later date. At a previous office visit, I had made the comment that it seemed like we were having a lot of problems. At the time that I made this comment, I had been suffering for several months with reflux problems. The previous year (2003), Ray had gone to the hospital with a blockage in his arteries. After waiting for hours in the emergency room, he had a heart attack while on his way to surgery to open the blocked artery. It was in 2004 when I had all of the problems with reflux and 2003 when Ray had the heart attack. It was in 2001 when we had a problem with a small amount of mold and a bad odor in our ceiling tiles in our family room. This is when we had the restoration done on our ceiling. December 28, 2001 is the date that we had testing done to check for mold. December 5, 2001 is the date that we had the sensor leak on our furnace. Both of these problems were in the same month. It turned out that these problems were not major problems. We had got to the problems in time. See my copies of the records on all three problems: the mold, the odor and the sensor leak. These records show when they happened and when they were fixed. While looking over our medical records, I see now that problems I had commented on that had happened in the past are still being brought forward from the past to the present and getting mixed up with present health problems. This makes it look like we have been having mold problems all this time. This is not true.

#### 2005

I looked over our 2005 medical records and the same thing is still happening on my 2005 records. The problems with the mold, odor and carbon monoxide are still being put on my records as if they are still going on at the present. Please see my records of when this happened, when the testing was done and when it was fixed.

All of these mixed up records are causing me a lot of problems. Please try to get my medical records straightened out.

### EXPLANATION OF THE "MOLD" PROBLEM

We had a leak in the roof over our family room area during a blowing rain and wind storm. The ceiling tiles in our family room got damp and had a bad smell. This caused a little mold between several of the ceiling tiles and a bad smell. We thought at first that the smell was the mold. We had the tiles tested on 12/28/2001 and was told that the small amount of mold that was found on the tiles was not enough to be causing the odor that we were smelling. At first our insurance company wanted to only replace the several ceiling tiles that had the small amount of mold between them. They wanted to have the ceiling sprayed to try to remove the cardboard odor. The ceiling tiles were the old tiles that were made out of ground cardboard. When they got damp, they smelled like damp cardboard. Even after they had dried, they still had the same odor. The Restoration Company told the insurance company that spraying the tiles would not remove the odor. They had tried that before and knew that it would not work. They told the insurance company that the tiles would have to be removed to get rid of the odor. The insurance company agreed to cover the expense so the ceiling tiles, insulation and plywood were all removed and replaced with all new materials. We then had a new roof with moisture guard installed. Please refer to invoices showing when work was completed.

### EXPLANATION OF CARBON MONOXIDE LEAK

We had called out a HVAC man to check our unit out. He did a pressure check on the heat exchanger and found it to be working correctly. At first, he did not find anything wrong with the furnace. He was getting ready to come out from under the house when he accidentally laid his hand on the sensor and felt air coming out from it. The sensor was broken and leaking. The sensor leak was only a small amount. It did not set off the carbon monoxide detectors inside the house. They replaced the sensor the same day and fixed this. This was on 12/5/2001.

Concerning Jerry Fortenberry's testimony

Pages 218-260, Page 259 lines 19-25, page 260 lines 1-8: Mr. Walsfl is coaching Jerry Fortenberry to agree with what he is saying and Mr. Fortenberry goes right along with what he is coaching him to agree with.

**Jerry Fortenberry was never in our home until July 2007.**

October 2005 is when we returned home from vacation and found very heavy silver white powder piled up in front of our heat registers and all over our home. There were also very bad odors, stinky sock syndrome, and a very strong metallic odor. We didn't find out about all the problems in our home at this time. We found out a lot later on, a little at a time.

Please see page 220: Judge Cole and Mr. Bannister are talking about Jerry Fortenberry. Lines 17-18 Judge Cole asks Mr. Bannister if he has an expertise in identifying mold. Mr. Bannister answered that he does not. This is not true. He does have an expertise in identifying mold. He takes samples and sends them to a lab to be tested just like anyone else would have to do. He would have it tested to see if it was mold. Everyone would have to do this to make sure something is mold or not mold.

Please see page 221 lines 14-15: Judge Cole asks Mr. Bannister if anyone did testing. Mr. Bannister answered, "Not really, no." This is not true. James Kellett with JAK Enterprises did testing at our home on November 2, 2005. The test results showed mold spores blowing out of the heat register. Mr. Bannister didn't subpoena James Kellett and get him to court to testify so he just told Judge Cole that there wasn't any testing done. Mr. Bannister lied. We did have testing done. He didn't give this evidence to the jury.

Zacery Conner also did an air quality test on June 6, 2006 until June 14, 2006. We had already found out about the metal powders and mold. We were checking to see how bad the particle count was after all of the cleaning. Mr. Bannister didn't give this to the jury. The particle count was very high.

Jerry Tuck, owner of Tuck and Howell, their employees, and Glenn Bell of The Trane Company, told Ray and I that the silver powder is aluminum oxide (metal powder). So we already knew what the powder was before James Kellett did testing. He was checking to see how bad the air quality was after the cleaning. So, why would our attorney, Bill Bannister, tell Judge Cole that there was no testing done?

Mr. Bannister did not get the subpoenas to James Kellett and get him to court to testify. Mr. Bannister told Judge Cole that there wasn't any testing done. This is not true. Mr. Bannister lied about this.

Page 226 lines 8-10: Judge Cole said "There is testimony in the records that it was aluminum oxide, aluminum oxide in the residence that wasn't supposed to be there."

We were told by Jerry Fortenberry, Robert Beasley, and James Kellett that the law says you can't do both the testing and the cleanup; you can only do one or the other, not both. The law doesn't allow them to do both.

See page 236 lines 22-23: Judge Cole said "there is some evidence in this record from which a jury could find that there was aluminum oxide in the residence".

See page 237 lines 3-7: This is about Mr. Tuck telling me he didn't have to have the white powder tested because he knew it was aluminum oxide.

Please see page 238 lines 14-15: Judge Cole said there is evidence in the records that aluminum oxide was present in the residence.

Page 238 lines 19-21: Judge Cole said Mr. Tuck told Mrs. Long that aluminum oxide was in the residence.

Jerry Fortenberry could not and would not guarantee us that they could clean all these toxins out of our home and make it safe to live in again. They would not even mention the list of different toxins that are in our home in their proposal. They would not list what they are supposed to be cleaning from our home. They knew that they would have to prove they cleaned these toxins from our home if they listed them in their proposal. They were very careful not to mention what the toxins were in our home. When Jerry Fortenberry gave us the quote, we asked him why he did not list what he was supposed to be cleaning from our home and he said that the company attorney advised them on how the proposal should be written.

We spoke with thirteen different companies in the upstate area and in North Carolina. They all said that there are no work procedures, guidelines or anything for cleaning up aluminum oxide out of a home. They all said that they have never had any training on cleaning aluminum oxide from a home. They all said they have never heard of this being in a home before and could not find anyone that had heard of it. They all said they were not certified to even try to clean the aluminum oxide out of our home.

Jerry Fortenberry is one of the thirteen different companies that told us there was no work procedures, guidelines, or anything for cleaning up aluminum oxide metals out of a home. They all said they have never had any training on cleaning aluminum oxide out of a home. They all said that they could not and would not tell us our home would ever be safe to live in again.

**Jerry Fortenberry told us when he came to our home that there is research that suggest aluminum oxide metals may have something to do with Alzheimer's and other health problems. He said the reason he remembers Alzheimer's being one of the problems it causes is because his mother had just recently died of Alzheimer's disease. He also said the same thing in his deposition on November 10, 2010.**

### Concerning Jerry Fortenberry's Proposal

Please see Page 90: Mr. Bannister asked me if Jerry Fortenberry gave me a proposal to clean the home. I was not allowed to say that the proposal he gave us was only to try to clean the mold out of our home. Nothing else, just mold. This proposal didn't even mention the aluminum oxide or any of the other poison Tuck and Howell put in our home. The proposal didn't even mention anything else being in our home other than mold. So if they don't mention in their proposal all these other poisons that are in our home, then they don't have to clean them out of our home. If they list the poisons that are in our home then they have got to give us proof that they got all these poisons out of our home. They cover their backs by not listing in the proposal what is in our home. This way, they don't have to get it out of our home.

The proposal was to try to get the mold out. Mr. Fortenberry told us that they don't have to get all the mold out of our home. He said they only had to get the mold count down lower on the inside of the home than it is on the outside of the home.

\*Mr. Walsh and Judge Cole would not allow me to say the proposal was for the mold only and all the other poisons that are in our home were not included in this proposal. Mr. Walsh and Judge Cole would cut me off. They wouldn't let me tell this to the jury. Judge Cole and Mr. Walsh wanted me to say the proposal was to clean all the poisons out of our home. This is not true.

They wanted the jury to think the proposal was to clean all these poisons out of our home. When Mr. Fortenberry gave us the proposal we asked him why he only mentioned mold in the proposal and why did he not mention the aluminum oxide and the other poisons that are in our home. He told us that the company attorney told them how the proposal should be written.

He told us again that there is no work procedures, guidelines, or anything for cleaning up aluminum oxide (heavy metals) out of a home. He said they have never had any training on cleaning aluminum oxide (metals) from a home. He said he could not and would not tell us that he could get all these poisons out of our home and make it safe to live in again.

\*Mr. Bannister had the proposal and I had the proposal. Why did Mr. Bannister not give the proposal to Mr. Fortenberry and have him read his own proposal while he was on the stand testifying. This would have proved he didn't say in this proposal he would clean all these poisons out of our home. He did not even mention all these other poisons that are in our home in his proposal. He didn't even mention aluminum oxide (heavy metals) at all in his proposal.

### Sherman Woodson's Testimony

He was at our home in 2010 and 2011.

Page 277-Mr. Woodson is saying what the attorneys prepared him to say. There is no way he could have known that we had a rain leak between several ceiling tiles in our family room ceiling caused by a storm in 2001. These attorneys had told him about this happening in 2001 and prepared him to say there was evidence of this rain leak in our home in 2010 and 2011 when he came to our home.

All of these things Sherman Woodson is saying about the ceiling in our family room is all lies.

He said that he "could see evidence of moisture intrusion that water could have come down through, you know, maybe the ceiling through the attic. It looked like almost around the chimney there had been a leak at one time. I saw a little bit of wallpaper peeling. Some of the spray on material on the ceiling looked like it had kind of loosened in areas. Those are indications of, you know, maybe a roof leak."

Mr. Bannister let the jury think this was the truth, what Mr. Woodson was saying about the ceiling. He knew it was not true. We had already been through this at my deposition. Mr. Bannister had the documents to prove this was not true. Mr. Bannister and attorney John Harjehousen has both been in our home and they both knew this was not true. He is saying what he was paid to say.

Mr. Bannister did not give this evidence to the jury. He let the jury think that what Mr. Woodson was saying was the truth.

When we had the rain leak from the storm in 2001, the restoration company removed all of the ceiling tiles, all the plywood and all of the insulation in the attic over the family room where we had the rain leak. \*They replaced everything with new materials. We have a new ceiling.

He did not see any damages to our ceiling from the rain leak from the storm in 2001. There was not anything wrong with our ceiling in 2010 and 2011. It was a new ceiling.

The attorneys told him about the rain leak from the storm in 2001, or they gave him the documents concerning this. They told him to say theses damages were present when he came to our home in 2010 and 2011.

The attorneys wanted him to give this to the jury that these damages were present when Tuck and Howell installed the new heat pump and ductwork in 2004.

There was no sign on our ceiling that we had ever had a rain leak. We have a new ceiling.

\*These attorneys told him to say this to the jury.

These attorneys have been in our home and they all know this was not true. Attorney Bill Bannister has been in our home, attorney John Harjehousen has been in our home several times.

They all have the documents showing when this happened and when the restoration company did the restoration work and put in a new ceiling.

\*Mr. Bannister sat there and listened to Sherman Woodson talk about damages to our ceiling in our family room and say "those are indications of, you know, maybe a roof leak, like I said maybe around the chimney."

\*Mr. Bannister knew this was not true. He had been in our home. He knew the restoration company had put in a new ceiling. He knew what Sherman Woodson was saying was not true.

\*He just sat there and listened to him give this to the jury.

\*When Mr. Banister did cross-examination with Sherman Woodson, he didn't do anything to tell the jury that we had a new ceiling when Mr. Woodson was at our home in 2010 and 2011, so he could not have seen damages that he said he had seen. There weren't any damages.

\*Why did Mr. Bannister not bring this up on cross-examination and let the jury know that Mr. Woodson had not seen any damages to the ceiling in our family room when he was at our home in 2010 and 2011. He had lied.

\*The restoration company had put the new ceiling in eight or nine years before Sherman Woodson went to our home in 2010 and 2011. We had a new ceiling.

All of these attorneys had the documents showing when this rain leak happened and when the restoration company did the restoration work and put in a new ceiling. Mr. Bannister was part of this. He knew what Sherman Woodson was saying wasn't true. He did not do anything to correct this. Mr. Bannister just let the jury think Mr. Woodson was telling the truth.

See Page 285-286-Sherman Woodson is saying our home was clean when he went in it in 2010 and 2011. This is not true. These attorneys paid him to say these things. Our home hasn't been cleaned since December 2005 when we left our home.

These poisons that Tuck and Howell, The Trane Company, and Steamatic of Greenville put in our home are still in our home.

The metal powder dust and mold spores were still very bad when we left our home in December 2005. The odors were still bad when we left our home.

\*Six months after we left our home we had someone to do testing to see how bad the metal powder and the mold spore particle count was in our home. The particle count was still very high with the metal powder dust and the mold spores when we left our home. The particle count registered as high as the machine would register. The machine could not register all of the dust because it was so bad. You can imagine how high the metal dust and mold count was before all of the cleaning had been done.

This particle count test was done six months after we had left our home. These test were done on 6/6/2006.

\*Please see the attached copy of this particle count report. You can see the metal dust and mold spores were so heavy that it registered as high at the machine would register. This size of particles go deep into the lungs. This is not all of the report. There is a lot of pages to the report.

The particle count test was done after Steamatic of Greenville had tried to vacuum some of the metal powder dust and mold spores out of the heat pump system and ductwork. This was after Steamatic did the microban treatment (mold treatment). This was after we had been vacuuming, damp mopping, and damp dusting everything in our home over and over again for three months.

We did not know the aluminum oxide powder dust was metals when we were in our home doing all this cleaning for three months. We were being told it was not harmful.

We did not know this when we left our home in December 2005. The doctors told us later that aluminum oxide is metals. They told us to leave the contaminated home and stay away from the home because the metals are very harmful. We told them we had already left our home because we were very sick

Page 285-Sherman Woodson said he had seen a coating of white powder on a piece of furniture in our home. He said he did a wipe sample of the white powder and had it tested. He said the test showed it was aluminum.

\*Sherman Woodson proved the white powder dust in our home is aluminum powder dust (metals). He also proved the metals are still in our home.

This is after the microban (mold) treatment. This was after Steamatic had tried to vacuum the metal dust and mold spores out of the heat pump system and ductwork.

This was after we had been vacuuming, damp mopping and damp dusting everything in our home over and over again for three months.

\*He has proved the metal powder and mold is still in our home.

The metal powders, mold, bacteria, stinky sock syndrome odors, metallic odors, the refrigerant leaking onto the coils and burning off for three months; all of these poisons are still in everything in our home. All of these toxins were burning on the coils together and putting off very toxic fumes. These stong toxic fumes.were absorbed into the sheetrock, textured ceilings, our cabinets, our furniture, our clothes, everything in our home. These poisons did not leave our home; they are still there in our home.

\*They are also still in our bodies.

Thirteen different companies told us there are no work procedures, guidelines, or anything for cleaning these poisons from a home. They said they could not and would not guarantee us that they could clean all the poisons out of our home.

**We are suffering every day of our lives from being poisoned with all these different poisons. \*We have been tested and we have very high metals in our bodies. \*We are having a lot of severe health problems from this. \*We are terrified of our home.**

Page 300-301-Mr. Bannister asked Sherman Woodson if he observed the coils that was taken our of our home and he said yes.

Mr. Bannister asked: "Did they have aluminum oxide on them?"

Mr. Woodson answered: "No. I wouldn't say that anything looked abnormal to me as far as the coils."

Mr. Banister said: "Okay, You didn't notice anything on it? Nothing white?"

Mr. Woodson answered: "No, I mean they might have had a white tint to the coils."

Mr. Bannister had seen the coils at our home. He pretended he didn't see all these poisons on these coils. We had also given him very good pictures of these coils. We had pointed out all of this to Sherman Woodson. The different colors of metal powder dust, the rusted coils and pipes, the large hole rusted out on the coils and he had seen what was on these coils. He smelled the odors on the coils.

Mr. Woodson said what the attorneys had prepared him to say and what he was paid to say. He had seen all these poisons on the coils. We were standing there when he and attorney John Harjehausen were looking at the coils.

We had these coils sitting on the front porch so they could see all the different colors of metal powder dust, mold, rusted coils and pipes on the coils, a large hole rusted out on the coils. We wanted them to see these coils and what we have been exposed to for over a year, 24 hours a day. We were breathing these poisons constantly.

\*Mr. Bannister should have pulled the pictures of the coils out of his file and showed them to the jury. Mr. Bannister did not give this evidence to the jury. The jury did not see what this case was about because Mr. Bannister would not give our evidence to the jury.

\*When we would have a break, my daughter and I would beg Mr. Bannister to give our evidence to the jury but he would not give our evidence to the jury.

\*The jury did not see these coils with all these different poisons on them. They did not see how bad all these poisons were in our home. They did not see what we had been poisoned with for 24 hours a day for over a year.

\*Mr. Bannister made sure the jury did not see these coils. He did not give this evidence to the jury. Mr. Bannister let the jury think that he had not seen the coils. He did not mention that he had very good pictures of the evidence on the coils. He did not show the jury the pictures of the coils.

See Page 302 –Mr. Bannister said to Mr. Woodson, “Let me show you this and ask you if that’s the Kellett document that you saw.”

Mr. Woodson answered: “I believe so, yes. I believe, yeah. It’s got his name on here.”

Mr. Bannister asked Mr. Woodson: “Have you reviewed that in making your opinion?”

Mr. Woodson answered: “That’s correct, yes.”

Mr. Woodson said he had reviewed James Kellett’s documents in making his opinion.

Someone had given Sherman Woodson our documents of the testing we had James Kellett to do at our home.

James Kellett is the one that did testing in our home in November 2005 and the test results came back showing mold blowing out of the ductwork.

Attorney James Walsh or attorney John Harjehousen would have been the ones that had these documents to give to him. They gave him our documents from James Kellett to help him make his opinion on our home.

Page 302-Mr. Bannister asked Mr. Woodson: “have you ever heard of stinky sock syndrome?”

Mr. Woodson answered: “In general terms, yes.”

Page 303-Mr. Banister asked: “What is it?”

Mr. Woodson answered: “Well, it’s usually in the ventilation system, some kind of a situation where either the drip pan or the drain pipes, somehow in the system, has quit draining water and what happens is, you know, when the air system operates, then whatever bacteria is growing in the stagnant water, you know, produces a musty odor, and it, I guess smells like a gym locker or stinky sock is where it got its name.”

Mr. Bannister said “Alright, Sir. I think that’s all I have.”

This was caused by Tuck and Howell’s faulty installation while installing the new hat pump system and ductwork.

Tuck and Howell wired the condensate pump to the light switch under our home. So when the light under our home was turned off, the condensate pump was turned off also. The condensate pump never pumped the water outside our home that it was supposed to do. The water had been backing up in the heat pump system and ductwork for over a year. This is what caused all the damages that destroyed our home, our health and most of everything we owned.

**Mr. Bannister did not explain this to the jury about the condensate pump not working because of faulty installation. Mr. Bannister did not explain to the jury that it was Tuck and Howell’s faulty installation that caused all these damages that destroyed our home, our health and most everything we owned. The jury did not hear this.**

**We haven’t seen any documents of any testing nor any testing results that Sherman Woodson did at our home. Attorney James Walsh and attorney John Harjehousen would not give us these results.**

**I have not found out yet whether or not they gave the jury any records. I don’t know.**

This was taken from the air quality report that was done on our home. "Air advice report".

This shows how high the particle count was after Tuck and Howell's men had changed the coils with the metal powder on them.

Steamatic had tried to vacuum the powder out of the duct work.

We had cleaned the inside of our home from one end to the other.

We had vacuumed, wet mopped, damp dusted. We had cleaned everything in our home.

\*The particle count was still very high. You can imagine what the count was before all of the cleaning had been done.

\*This also shows the size of the particles which is M3.

\*They are small enough to reach deeply into the lungs and cause long term health problems.

They are referring to house dust where they are telling on this report of the health problems these high particle counts can cause.

They are not referring to heavy metal and mold particles. They did not know that the very high particle count was heavy metals and mold in our home. They thought it was house dust.

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## Test Parameters

though each sensor is calibrated to the same concentration of a particular VOC, a concern is that by expressing the concentration in parts per million confusion may result when comparing these readings to those obtained by other devices, potentially in the same building.

No recommended guidelines for airborne concentrations of TVOCs currently exist. Measurements of TVOCs are, however, useful for identifying potential sources or locations of VOCs that could present comfort, health, or fire hazards for humans. This data can also be used to determine the cause and effect of various processes that may be associated with the release of these compounds.

### Particles

A laser light scatter sensor with a range of 0.3-10 microns.

Particles in indoor air, collectively referred to as dust, form a complex mixture that originates from a variety of sources, including the outdoors, office equipment, building materials, furnishings, and occupants. Particles are an important category of indoor air pollutants because in high enough concentrations, they can act as irritants to the eyes, skin, and respiratory tract.

Particle size affects how far particles can penetrate into the respiratory tract and determines the sites of possible health effects. Inhalable particles are those that can deposit anywhere in the respiratory tract from the nose and upper airways to the lower airways and lung tissue where gas exchange occurs. The diameter of inhaled particles that can reach the nose, mouth, trachea, and airways in the lungs but not in the gas exchange areas is generally between 10 microns ( $\mu\text{m}$ ) and 100  $\mu\text{m}$  in aerodynamic diameter (1 micron equals approximately 1/25,000 of an inch). Particles less than 5  $\mu\text{m}$  can reach the trachea and all of the airways. Respirable suspended particles (RSP), that is, those that can initially reach the gas exchange region of the lungs, are defined as particles in the air that are less than 3.5  $\mu\text{m}$  in aerodynamic diameter. Because RSP are small enough to reach deeply into the lungs, they may present long-term health concerns. Environmental tobacco smoke is one example of a major source of RSP.

The EPA's 24-hour standard for PM<sub>10</sub> is 150 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), (0.150 milligrams per cubic meter [ $\text{mg}/\text{m}^3$ ]), and cannot be exceeded more than once per year; the standard for the year is an average of 50  $\mu\text{g}/\text{m}^3$  (0.050  $\text{mg}/\text{m}^3$ ). For PM<sub>2.5</sub>, these limits are 65  $\mu\text{g}/\text{m}^3$  and 15  $\mu\text{g}/\text{m}^3$ , respectively. The Occupational Safety and Health Administration (OSHA) has promulgated an occupational permissible exposure limit (PEL) for "particulates not otherwise regulated" of 15  $\text{mg}/\text{m}^3$  (15,000  $\mu\text{g}/\text{m}^3$ ) for total dust and 5  $\text{mg}/\text{m}^3$  (5,000  $\mu\text{g}/\text{m}^3$ ) for the respirable fraction of these particulates for eight-hour time-weighted average (TWA) exposures.

Because most of the above guidelines deal with outdoor particle levels, Aircuity has chosen to set limits of 20 and 40  $\mu\text{g}/\text{m}^3$  respectively for the PM<sub>2.5</sub> and PM<sub>10</sub> levels in commercial office buildings. These values were arrived at by reviewing particle data collected in approximately 100 commercial office buildings.

The Optima Monitor utilizes a particle counter to measure and record both short and long term trends within the building. However, the only standards developed for IAQ have used a mass measurement system, in which particles of these size ranges are captured on a filter during a specified time period and weighed. In order to give a rough comparison between the particle count information collected by the portable monitor and the current standards, a conversion is used assuming a log normal distribution of particles (see *Air Quality Criteria for Particulate Matter, US EPA, April 1996*) within the two size categories. This conversion is commonly employed in most commercially available particle counting equipment. The portable monitor and database therefore track and record particle count information, and a conversion to mass is performed during the reporting process for comparative purposes.

### Radon

An integrated circuit sensor with an operating range that goes beyond naturally occurring concentrations, with an accuracy of +/- 1 pCi/L, resolution of +/- 0.2 pCi/L, and response time of 1 hour. (Best results are achieved over 24 hours to account for the natural variations within a typical indoor environment.)

Radon is a colorless, odorless, radioactive gas that occurs naturally and is found throughout the environment at very low levels. The most common source of indoor radon is uranium in the soil or rock on which buildings are built. As uranium

# Health Particle Allergens

## TEST RESULTS

\* **What We Found:** Allergen levels were above 40 ug/m<sup>3</sup> for one or more days.

**Action Necessary**

\* **Why is action necessary?**

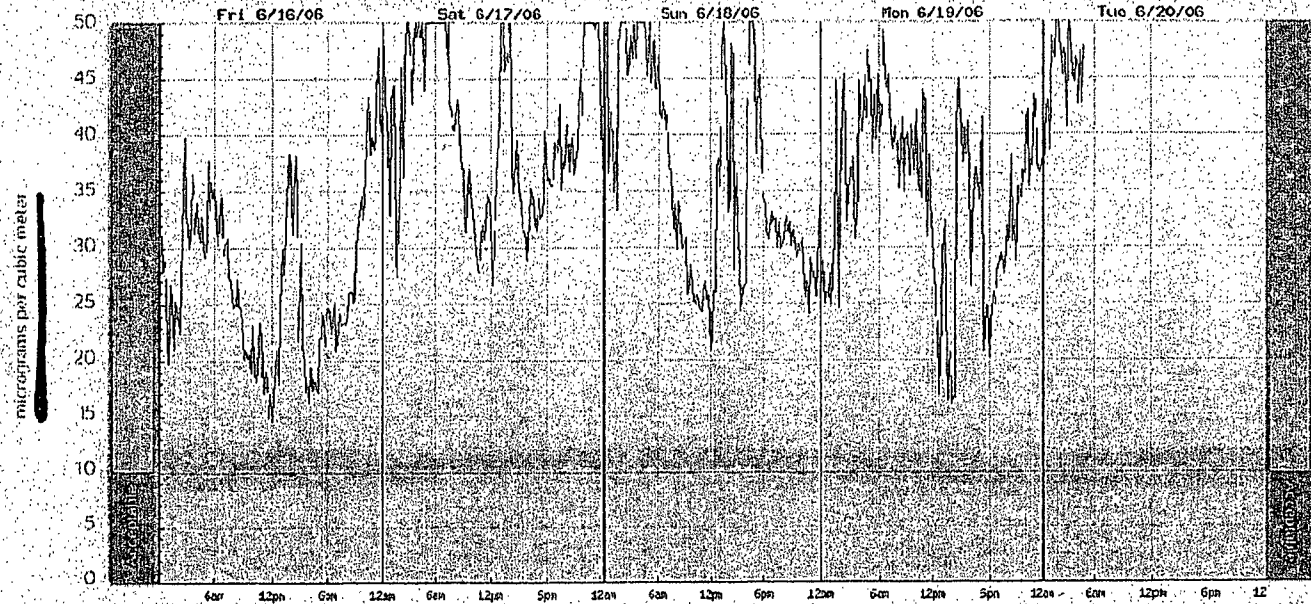
Particle allergens are generally a cause for concern when daily average levels are above 10 ug/m<sup>3</sup>.

Particle allergens are known to trigger asthma and allergy symptoms. At levels above 40 ug/m<sup>3</sup>, they can harm normally healthy adults by causing emphysema and diminished lung capacity. Children, the elderly, and pregnant women are more susceptible.

Source: American Lung Association, Environmental Protection Agency (EPA), Indoor Air Quality Association (IAQA)

[www.airadvice.com](http://www.airadvice.com)

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\* **Highest Daily Average: 42 ug/m<sup>3</sup>** \* **Highest Hourly Average: 59 ug/m<sup>3</sup>** \* **Overall Average: 35 ug/m<sup>3</sup>**

## ABOUT PARTICLE ALLERGENS

Particle allergens are always present in your home's air. They can build up to unhealthy levels due to activities in the home, the presence of excessive sources, and heating & cooling system issues.

Sources: Pets, dirt on shoes, burning candles, smoking, open windows (outside pollen, spores, etc.), dust mites, many common household activities, including cooking and cleaning.

Possible heating & cooling issues: Leaky, dirty, or poorly designed ductwork, inadequate filtration, no filtration at all.

## RECOMMENDED ACTION

There are many steps you can take to control sources of particle allergens. You can:

- Clean, replace or upgrade Filter
- Seal duct work
- Clean duct work
- Use the exhaust fan during cooking

 **advice**  
Healthy air starts here.

Concerning both Scott Cooper and J.P. McConnell's testimonies

-They are both saying the same thing.

Page 310- Scott Cooper is bragging about Tuck and Howell receiving the Better Business Bureau integrity award for 2009. The Better Business Bureau did not know that they had destroyed two senior citizens' health, our home, and most everything we owned with several different kinds of poison.

You can't imagine how we felt sitting there listening to him bragging about Tuck and Howell receiving the integrity award while we are struggling to get by because of these people, and to hear that they received this award while all of this is going on with us losing everything. We couldn't feel much lower than we felt hearing this. This really upset us badly.

When the Better Business Bureau gave Tuck and Howell the integrity award in 2009. They did not know that only a few months earlier the SC Contractor Licensing Board in Columbia had found Tuck and Howell guilty of negligence for wiring the condensate pump to the light switch in the crawl space under our home. Therefore causing the aluminum oxide powder (metals) that was emitted throughout our home.

Judge Cole would not allow this to be brought up at our trial that the Licensing Board in Columbia had already found Tuck and Howell guilty of wiring the condensate pump to the light switch under our home and causing the aluminum oxide powder (metal powder) that was emitted throughout our home.

The Licensing Board also found Tuck and Howell guilty of not getting a permit to do the mechanical construction work at our home until a year later. After we found all the problems in October 2005, that was caused by all of their faulty installation, they went and got a permit. They got the permit a year after they had installed the new heat pump system and ductwork at our home.

We filed a complaint with the South Carolina Department of Labor, Licensing and Regulation Contractor's Licensing Board in Columbia, SC on May 19, 2008 for Tuck and Howell's negligent installation on installing a new heat pump system and ductwork that caused all these problems at our home.

The Licensing Board found them guilty of negligence. They also found them guilty of not getting a permit to do the work at our home.

The Licensing Board sent Tuck and Howell a letter telling them that they had found them guilty and issued disciplinary actions and a fine against Tuck and Howell. Jerry Tuck signed the consent agreement on December 4, 2008 admitting their guilt.

Judge Cole would not let this evidence be given to the jury.

Page 312- I can't figure this one out. What does washing a milk jug have to do with this case?

Page 349- Mr. Bannister brought this up again.

Page 315- When we first spoke with Scott Cooper about getting a new heat pump system and new ductwork, we told him we had been remodeling and updating everything in our home getting ready for our retirement years. We told Mr. Cooper that we wanted the gas furnace and all the ductwork taken out and replaced with a new heat pump system and ductwork.

When they came to our home and started to work, they removed the gas furnace and all the ductwork except one piece of ductwork that runs from one end of our home to the other end of the home. They left our home to go to lunch or to pick up materials (I don't remember which one it was) and while they were gone, Ray went outside and looked under the home to see how much they had gotten done on taking everything out. They had taken everything out except the piece of ductwork that ran from one end of the home to the other end of the home. We just thought they would remove this last piece of ductwork when they returned.

When they returned, J.P. McConnell said to Ray we are ready to start installing. Ray told Mr. McConnell that you have not removed all the ductwork like you were supposed to do. Mr. McConnell said Scott lets me make the call on whether to take that piece out or not take it out. He said I don't think that piece needs to be taken out. Ray told him that wasn't for him to decide. Ray said I told Scott Cooper that we wanted all of the ductwork taken out because we are updating everything in our home with everything new getting ready for our retirement years.

Mr. McConnell called Mr. Cooper out to our home. When he got there, he came inside to speak with Ray and I. Ray said to Mr. Cooper, Scott you know very well that we told you we were remodeling and updating our home with everything new getting ready for our retirement years. You know we told you we wanted the gas furnace and all the ductwork taken out and replaced with a new heat pump system and all new ductwork.

Scott said J.P. said that piece of ductwork looked okay and he thought it would be okay to leave it.

Ray said again we told you we wanted all the ductwork taken out and replaced with all new ductwork. Mr. Cooper knew we had told him we wanted all the ductwork taken out and replaced with all new ductwork.

Mr. Cooper told Ray that he would tell Mr. McConnell to remove this piece of ductwork.

All these things they said about we were running around in the backyard demanding them to take this piece of ductwork out is not true. This did not happen. Mr. Cooper came inside our home to discuss this problem. He knew that we had told him that we wanted all ductwork taken out and replaced with all new ductwork. He went back outside and told Mr. McConnell to take this piece of ductwork out. They took this last piece of ductwork out.

See pages 318-320- Scott Cooper is saying we told him that we had an overflow or something and water got into the ductwork.

They are saying this happened before they ever came to our home in November 2004. They are saying this happened before they took the gas furnace and ductwork out in November 2004. We never had an overflow of water in to the ductwork before they removed the gas furnace and old ductwork.

Page 319- Scott Cooper and J.P. McConnell are talking about mold in the ductwork.

Page 320- Scott Cooper and J.P. McConnell are talking about Ray and I being upset. They are talking about dried up water, water streaks in the ductwork, gray material, and odor that was musty, mildew smell to it in the ductwork.

This happened in October 2005, when we returned home from vacation and found all these toxins in our home. Yes we were very upset. We were not running around in the yard screaming we have mold in our home. We were inside our home when they came to our home. We were not running around in our yard screaming that there was mold in our home.

\*This did not happen in November 2004 when they were removing the gas furnace and ductwork.

\*In October 2005, they found water, mold, 3 different colors of metal powder that oxidized the coils, rusted coils, a large hole rusted out on the coils, stinky sock syndrome, metallic odors and lots of bacteria.

All of this was on the first coils that was in the new heat pump system and ductwork that Tuck and Howell installed in our home that had the oxidation problem.

It was also in October 2005 after Tuck and Howell had removed the coils that had oxidized and caused all of these problems. Jerry Tuck sent J.P. McConnell and his helper out to our home to brush the metal powder dust and whatever he could brush off the coils to get a sample for him to have tested. He also had them to remove an 8 foot piece of ductwork so they could see how bad all this mess was inside the ductwork.

\*This all happened in October 2005. It did not happen in November 2004 like they are saying.

Scott Cooper and J.P. McConnel are talking about Ray and I being upset. Yes we were very upset. This happened in October 2005 when we found out about all these poisons in our home.

They have taken these problems that were caused by their faulty installation of the new heat pump system and ductwork and moved these problems back to say these problems happened before they installed the new heat pump system and ductwork. This is not true.

These problems were caused because Tuck and Howell wired the condensate pump to the light switch under our home. When the light under our home was turned off, the pump was off also. The water was not being pumped outside of our home. The water was backing up into the heat pump system and ductwork for over a year. They have taken these problems that was caused by their faulty installation and moved them back to say these problems happened before they installed the new heat pump system and ductwork. This is not true.

See page 338-They are blaming the Trane company for these refrigerant leaks. This was not the Trane Company's fault. This was caused by Tuck and Howell's faulty installations while installing the replacement coils. They made holes in the replacement coils while they were installing them.

We left our home the last of December 2005 because we were having severe health problems from being poisoned.

After three more months of everything getting worse by the day and Tuck and Howell continuing to poison us over and over again, we called someone out to try to help us find out what was causing all these problems.

On January 16, 2006 we called another heating and air company to come out and do a diagnostic test on this new heat pump system and ductwork to try to help us find out what was causing all these problems with this new heat pump and ductwork Tuck and Howell had installed in our home.

General Heating and Air found out what was causing all these problems. It was faulty installation Tuck and Howell did while installing the new heat pump and ductwork at our home.

I told him we had also found out why our electric bills had doubled for October, November, and December 2005.

When we called our electric company out this was also after three more months of Tuck and Howell continuing to put more poisons in our home over and over again.

On January 16, 2006 we called our electric company to come out and see why our electric bills were so high. We told them that we had a new heat pump system and ductwork put in our home earlier and that we had been having a lot of problems with this new heat pump system. We told them about the refrigerant leaking out three months in a row.

The electric company said that the refrigerant leaking out is what was causing the high electric bills. This is when we found out what was causing the electric bills to be so high for three months.

See Pages 344-346

Starting on Page 344- Scott Cooper said I called him in January 2006 complaining about problems. He said it has got him upset. I couldn't sleep. I don't know what is going on. He said I was just chewing him out over stuff.

He did know what was going on. He knew what this was all about but he didn't want to tell the jury what it was about. He didn't tell the jury why I had called him.

I called him on January 30, 2006.

I told Mr. Cooper that we have finally found out what was causing all these problems that destroyed our health, our home, and most everything that we had. These damages were caused by Tuck and Howell's faulty installation while they were installing the new heat pump system and ductwork and also their faulty installation while installing the replacement coils.

I said to him, after three and a half months of Tuck and Howell putting all of the blame on the Trane Company, we found out that it was Tuck and Howell faulty installation that caused all these poisons that destroyed our health, our home and most everything we owned.

I said to him, after three and a half months of everything getting worse by the day and after three and a half months of them continuing to poison us over and over again we left our home.

I told him that we called another heating and air company to come out and do a diagnostic test on this new heat pump system and ductwork to try to help us find out what was causing all these problems with this new heat pump and ductwork Tuck and Howell had installed in our home.

I told him we called General Heating and Air out and they found out what was causing these problems. They found all the faulty installation Tuck and Howell did while installing the new heat pump and ductwork.

This phone call was after three and a half more months of Tuck and Howell continuing to put more poisons in our home and our bodies.

This phone call was three and half months after we found water, mold, bacteria, three different colors of metal powder that oxidized off the coils, stinky sock syndrome, metallic odors, chemical odors all over our home, rusted coils and pipes inside the heat pump system and a large hole rusted out on the coils. All of this was caused from water backing up in the heat pump system for over a year because of Tuck and Howell faulty installation while installing the new heat pump system and ductwork.

The phone call was also three and a half months after Steamatic of Greenville poisoned us with a microban treatment without our knowledge while we were in our home breathing this. They were putting this treatment in the heat pump system and ductwork while they were underneath our home to try to clean the aluminum oxide powder out of the heat pump system and ductwork. Tuck and Howell paid them to do this microban treatment. This happened in October in 2005.

This phone call was also after Tuck and Howell had poisoned us from refrigerant leaking out and burning off the replacement coils, three different times in a three month period. They made holes in the replacement coils while they were installing them. This caused the refrigerant to leak out and burn off the coils October, November and December 2005.

Concerning Tuck and Howell not getting a Permit

\*This is very important\*

See pages 363-365-They are talking about Tuck and Howell not getting a permit to do the work at our home.

Judge Cole would not let Mr. Bannister give this evidence to the jury.

On Page 365- Judge Cole said the fact of whether or not they had a license had nothing to do with the allegations in this case. So I'm not going to permit it.

This has a lot to do with this case!

It was required that Tuck and Howell was supposed to get a permit to do the work at our home before they ever started to work at our home.

There is very good reason for this requirement.

If they had gotten a permit to do the work at our home like they are required to do, then upon completion of the work they were required to call the permit office and ask them to send an inspector out to our home and inspect this work. This did not happen. Tuck and Howell did not have their work inspected when they had finished installing the new heat pump and new ductwork.

If Tuck and Howell had gotten the permit like they were required to do and also had the new heat pump system and ductwork inspected like they are required to do, then the inspector should have caught all this faulty installation before they destroyed our health, our home, and everything we owned.

\*Judge Cole would not allow Mr. Bannister to tell the jury that Tuck and Howell did not get the permit to do the work at our home like they were required to do. He also was not allowed to tell the jury that they did not have their work inspected after they had finished installing the new heat pump and ductwork . They are required to have their work inspected when the work is completed. We were not allowed to tell the jury this.

\*Judge Cole was protecting Tuck and Howell.

\*We were not allowed to give the evidence to the jury.

\*Tuck and Howell also did not inspect their installation work upon completion. If they had, then they should have caught all of their faulty installation before they destroyed our health, our home and most of everything we owned.

Page 376-Here is something else. I can't figure out. J.P. McConnell was talking about me having allergies. He said she had a terry cloth towel around her hair and said that she washed her hair several times a day because she was allergic to dander in her hair. I did not have dandruff in my hair. I can't remember of ever having dandruff in my life. If I had dandruff I would not shampoo my hair several times a day, nor would I have discussed it with him. I guess he doesn't know that dandruff does not cause allergies and allergies does not cause dandruff. I would have never told him that dandruff caused me to have allergy problems. I can't figure out how they came up with these things they are saying. What does dandruff have to do with this case?

Dr. Rozema did testing and found that Ray and I both have high levels of metals in our bodies.

I researched these metals that the tests showed that we have in our bodies to find out what I could about them. I found out that some of the metals that are in our bodies are a silver/white metal and some are a bluish gray color. (see attached page)

There are several different colors of powder dust that burned off of these coils.

There is silver/white powder dust.

There is bluish gray powder dust.

There is a very black powder dust.

The coils and pipes had rusted from the water leaking on them for a year.

There was a lot of different problems going on with these coils for a year.

12490

# URINE TOXIC METALS



LAB#: U091026-2248-1  
 PATIENT: Mary M. Long  
 SEX: Female  
 AGE: 66

CLIENT#: 27529  
 DOCTOR: T. C. Rozema, MD  
 Biogenesis Medical Center  
 1000 East Rutherford Road  
 Landrum, SC 29356 USA

## POTENTIALLY TOXIC METALS

METALS	RESULT µg/g CREAT	REFERENCE RANGE	WITHIN REFERENCE RANGE	ELEVATED	VERY ELEVATED
Aluminum	310	< 35			
Antimony	<dl	< 1			
Arsenic	18	< 130			
Beryllium	<dl	< 0.5			
Bismuth	2.1	< 15			
Cadmium	1.9	< 2			
Lead	22	< 5			
Mercury	18	< 4			
Nickel	26	< 12			
Platinum	<dl	< 1			
Thallium	0.2	< 0.8			
Thorium	<dl	< 0.3			
Tin	2.3	< 10			
Tungsten	<dl	< 1			
Uranium	0.2	< 0.2			

## CREATININE

	RESULT mg/dL	REFERENCE RANGE	2SD LOW	1SD LOW	MEAN	1SD HIGH	2SD HIGH
Creatinine	20.0	35 - 225					

## SPECIMEN DATA

Comments:  
 Date Collected: 10/21/2009      Method: ICP-MS      Collection Period: timed: 2 hours  
 Date Received: 10/26/2009      <dl: less than detection limit      Volume: 500 ml  
 Date Completed: 10/30/2009      Provoking Agent: DMPS CAEDTA      Provocation: POST PROVOCATIVE

Toxic metals are reported as µg/g creatinine to account for urine dilution variations. Reference ranges are representative of a healthy population under non-challenge or non-provoked conditions. No safe reference levels for toxic metals have been established. V10.00

Aluminum- A silver white metal that is strong, durable and very light. It is a metallic chemical element.

Cadmium- A white, ductile, metallic chemical element resembling tin. It is use in plating and making several alloys.

Lead- A heavy, easily melted, metallic chemical element of a dull, pale bluish-gray color. It is used to make pipes and machinery, as a solder in alloys, etc.

Nickel- A hard, silver-white, lustrous metallic chemical element that looks like silver and is somewhat like iron; much used as an alloy. Nickel is often used in alloys.

Alloy- A metal made by melting together two or more metals, or a metal and some other substance. Alloys are often harder, lighter, and stronger than the pure metals.

Mercury- A heavy, silver-white, highly toxic metallic chemical element, the only one that is liquid at room temperature; used in barometers and thermometers. It also has the property of dissolving other metals.

*This information came from my World Book Dictionary.*

This information was provided to us by a physician. If you will read this, you will understand why we can never live in our home again. There are many health problems tied directly to these heavy metals that we were exposed to. We have test results from a physician that show that we have high elevations of several different metals in our bodies and that we have heavy metal poisoning.

\*eMedicine Specialties > Critical Care > Medical Topics

## \* Toxicity, Aluminum

Michael R Edwards, MD, Medical Director, Department of Emergency Services, Beebe Medical Center; Barbara Barnett, MD, Associate Program Director, Assistant Professor, Department of Emergency Medicine, Albert Einstein College of Medicine

Updated: Apr 28, 2009

### Introduction

#### Background

Aluminum is a trivalent cation found in its ionic form in most kinds of animal and plant tissues and in natural waters everywhere.<sup>1</sup> It is the third most prevalent element and the most abundant metal in the earth's crust. Dietary aluminum is ubiquitous, but in such small quantities that it is not a significant source of concern in persons with normal elimination capacity. Urban water supplies may contain a greater concentration because water is usually treated with the element before becoming part of the supply. Subsequent purification processes that remove organic compounds take away many of the same compounds that bind the element in its free state, further increasing aluminum concentration.

All metals can cause disease through excess, deficiency, or imbalance.<sup>2</sup> Malabsorption through diarrheal states can result in essential metal and trace element deficiencies. Toxic effects are dependent upon the amount of metal ingested, entry rate, tissue distribution, concentration achieved, and excretion rate. Mechanisms of toxicity include inhibition of enzyme activity and protein synthesis, alterations in nucleic acid function, and changes in cell membrane permeability.

No known physiologic need exists for aluminum; however, because of its atomic size and electric charge (0.051 nm and 3+, respectively), it is sometimes a competitive inhibitor of several essential elements of similar characteristics, such as magnesium (0.066 nm, 2+), calcium (0.099 nm, 2+), and iron (0.064 nm, 3+). Approximately 95% of an aluminum load becomes bound to transferrin and albumin intravascularly and is then eliminated renally.

- \* Aluminum is absorbed from the GI tract in the form of oral phosphate-binding agents (aluminum hydroxide), parenterally via immunizations, via dialysate or total parenteral nutrition (TPN) contamination, via the urinary mucosa through bladder irrigation, and transdermally in antiperspirants. Lactate, citrate, and ascorbate all facilitate GI absorption.
- \* ~~If a significant load exceeds the body's excretory capacity, the excess is deposited in various tissues, including bone, brain, liver, heart, spleen, and muscle. This accumulation causes morbidity and mortality through various mechanisms.~~

#### Pathophysiology

Aluminum toxicity is usually found in patients with impaired renal function. Acute intoxication is extremely rare; however, in persons in whom aluminum clearance is impaired, it can be a significant source of pathology. Aluminum toxicity was originally described in the mid-to-late 1970s in a series of patients in Newcastle, England, through an associated osteomalacic dialysis osteodystrophy that appeared to reverse itself upon changing of the dialysate water to deionized water (ie, aluminum-depleted water). Previously, the only known dialysis-associated bone disease was osteitis fibrosa cystica, which was the result of abnormalities in vitamin D production that resulted in a secondary hyperparathyroidism, increased bone turnover, and subsequent peritrabecular fibrosis. In aluminum-related bone disease, the predominant features are defective mineralization and osteomalacia that result from excessive deposits at the site of osteoid mineralization, where calcium would normally be placed.

Since the role of aluminum in disease has been identified, more attention has been paid to the element, leading to its recognition in several other processes. For example, among patients with osteomalacia, there has been a closely

associated dialysis encephalopathy, which is thought to be caused by aluminum deposition in the brain. Aluminum causes an oxidative stress within brain tissue. Since the elimination half life of aluminum from the human brain is 7 years, this can result in cumulative damage via the element's interference with neurofilament axonal transport and neurofilament assembly. Some experts feel it plays a role in leading to the formation of Alzheimerlike neurofibrillary tangles.

Aluminum also has a direct effect on hematopoiesis. Excess aluminum has been shown to induce microcytic anemia. Daily injections of aluminum into rabbits produced severe anemia within 2-3 weeks. The findings were very similar to those found in patients suffering from lead poisoning.

Aluminum may cause anemia through decreased heme synthesis, decreased globulin synthesis, and increased hemolysis. Aluminum may also have a direct effect on iron metabolism: it influences absorption of iron via the intestine, it hinders iron's transport in the serum, and it displaces iron's binding to transferrin. Patients with anemia from aluminum toxicity often have increased reticulocyte counts, decreased mean corpuscular volume, and mean corpuscular hemoglobin.

Other organic manifestations of aluminum intoxication have been proposed, such as a slightly poorer immunologic response to infection, but the mechanism by which it exerts its effect is complex and multifactorial.

## Frequency

### United States

The actual incidence of toxicity is unknown. The greatest incidence is observed in patients with any degree of renal insufficiency. A higher incidence is observed in populations who have aluminum-contaminated dialysate or who are taking daily oral phosphate-binding agents. Patients who require long-term TPN are at increased risk as well.

Animal studies in rats and recent case reports have implicated the use of oral aluminum-containing antacids during pregnancy as a possible cause for abnormal fetal neurologic development.<sup>3</sup>

### International

Some evidence suggests that in developing countries where contaminated dialysis water is still used, aluminum-related disease is more prevalent. Also, as people still use over-the-counter aluminum-containing phosphate binders, aluminum deposition within the bone will continue and serve as a reservoir for continued exposure because of its long elimination half life.

## Mortality/Morbidity

The mortality rate may be as high as 100% in patients in whom the condition goes unrecognized. Today, however, recognition by nephrologists is the norm, and increased awareness by all practitioners has led to earlier detection and overall avoidance of the syndrome. Morbidity and mortality have been diminished significantly. Prior to this, bone pain, multiple fractures, proximal myopathy, and the sequelae of dementia have been the main sources of morbidity.

## Race

Aluminum toxicity has no predilection for any race.

## Sex

Aluminum toxicity has no predilection for either sex.

## Age

Aluminum toxicity is observed in all age groups but its end-organ effects are more prevalent in the aged, who may have diminished renal function.

## Clinical

### History

The signs and symptoms of aluminum toxicity are usually nonspecific.

- In patients on long-term hemodialysis, osteomalacia is associated with the accumulation of aluminum in bone. Most evidence to support skeletal toxicity is from animal studies.
- Studies have also shown that hemodialysis patients exposed to dialysate containing high aluminum concentrations are at increased risk of osteomalacia.
- Some of the clinical symptoms of the disease entity reflect the chief complaint. An emergency physician will rarely consider aluminum toxicity as a possible diagnosis in a dialysis patient who presents with an acute mental status change; however, these patients are the specific group most closely associated with the syndrome.
- Typical presentations may include proximal muscle weakness, bone pain, multiple nonhealing fractures, acute or subacute alteration in mental status, and premature osteoporosis.
  - These patients almost always have some degree of renal disease. Most patients are on hemodialysis or peritoneal dialysis.
  - When obtaining the history, ask specifically about the supplemental use of oral aluminum hydroxide, particularly if the patient does not undergo dialysis.
  - In children, special awareness must be made in those who require parenteral nutrition so as not to give excessive amounts of aluminum in the TPN.

### Physical

Unfortunately, physical findings are often noticeably lacking in patients with aluminum toxicity, and findings usually mimic other disease processes.

- Patients can present with multiple fractures (particularly of the ribs and pelvis), proximal muscle weakness, mutism, seizures, and dementia.
- Some studies have shown a direct correlation between aluminum levels and intensity of uremic pruritus.
  - In children, however, bony deformity is more commonly due to the increased rate of growth and remodeling.
  - Children may also express varying degrees of growth retardation.
  - The areas of deformity in children usually involve the epiphyseal plates (ie, femur, wrist).
  - In adults, thoracic cage abnormalities, lumbar scoliosis, and kyphosis can be present.

### Causes

- Toxic effects are dependent upon the amount of metal ingested, entry rate, tissue distribution, concentration achieved, and excretion rate.<sup>4,5,6,7</sup>
- Mechanisms of toxicity include inhibition of enzyme activity and protein synthesis, alterations in nucleic acid function, and changes in cell membrane permeability.
- Aluminum toxicity is usually found in patients with renal impairment. Acute intoxication is extremely rare;

\* however, in persons in whom aluminum clearance is impaired, it can be a source of significant toxicity. }

## Differential Diagnoses

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Brain Abscess	Head Trauma
Cryptococcosis	Hemolytic-Uremic Syndrome
Cysticercosis	Hepatorenal Syndrome
Delirium	Hyperosmolar Coma
Delirium Tremens	Hyperparathyroidism
Depression	Hyperphosphatemia
Eastern Equine Encephalitis	Hypocalcemia
Encephalopathy, Dialysis	Hypoglycemia
Encephalopathy, Hepatic	Hypothermia
Encephalopathy, Hypertensive	Hypothyroidism
Encephalopathy, Uremic	
Ependymoma	
Glioblastoma Multiforme	

## Other Problems to Be Considered

A broad differential exists for each potential problem, depending upon the presenting complaint (eg, musculoskeletal trauma, altered mental status, anemia).

## Workup

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### Laboratory Studies

Generally, findings from an aluminum level blood test are unreliable, as most of the body's stores are bound in bone and tissue and are not reflected in the serum value. A deferoxamine infusion test can be performed but may take more than 48 hours to yield a result (see Medical Care). Deferoxamine liberates aluminum from tissues by chelating it and leads to an increased serum level compared to one taken prior to infusion. The combination of a baseline immunoreactive parathyroid hormone level of less than 200 mEq/mL and a change in serum aluminum value of 200 ng/mL after deferoxamine is 90% specific and has a positive predictive value of 85% for aluminum toxicity.

- Aluminum excess has a direct effect on hematopoiesis and has been shown to induce anemia. Findings on peripheral smears in patients with aluminum toxicity include microcytic anemia (hypochromic, normochromic), anisocytosis, poikilocytosis, chromophilic cells, and basophilic stippling. Note that these are the same findings observed in patients with lead poisoning. Aluminum can also be found in bone marrow macrophages.

### Imaging Studies

- In radiographs, Looser zones (ie, lines of radiolucency parallel to the plane of growth in long bones) may be observed in severe cases, although they are more common with other causes of adult osteomalacia. Pathological fractures may also be observed. Bone scintigraphy shows a characteristic pattern in aluminum toxicity.

## Other Tests

- Bone biopsy from the iliac crest is frequently performed to determine the etiology of bone disease in dialysis patients because renal osteodystrophy can be multifactorial (eg, osteomalacia, uremic bone disease, hyperparathyroidism, aluminum deposition). Histochemical staining for aluminum and determination of osteoid volume, bone turnover rate, and osteoblast/clast cell count are some of the methods used for subtyping the bone disease.

## Procedures

- Very few procedures are involved in the diagnosis of aluminum-related illness. Bone marrow biopsy is performed to distinguish between aluminum osteodystrophy and other causes of osteomalacia.

## Histologic Findings

Histologic findings in aluminum-related osteomalacia reflect the decrease in mineralization of newly formed bone matrix.

- An increase in the surface covered by osteoid occurs, as does an increase in the osteoid seams.
- Osteoid volume and thickness also increase.
- In histologic sections stained with eosin, the areas of greater mineralization tend to appear violet or blue, whereas the osteoid seams appear pink.

## Treatment

### Medical Care

Treatment of aluminum toxicity includes elimination of aluminum from the diet, TPN, dialysate, medications, antiperspirants, and an attempt at the elimination and chelation of the element from the body's stores.

- Avoidance of aluminum is easily achieved once the need to do so is recognized.
- Elimination is accomplished through the administration of deferoxamine through any of several routes.
  - Deferoxamine, the metal-free ligand of the iron-chelate isolated from the bacterium *Streptomyces pilosus*, is used for acute and chronic iron toxicity and aluminum toxicity.
  - It has a high affinity for ferric iron and does not affect iron in hemoglobin or cytochromes.

### Surgical Care

No surgical care is applicable to this disorder. Hemodialysis is performed in conjunction with deferoxamine as therapy for whole body chelation

### Consultations

- Usually, a nephrologist is already a part of the patient's medical team. If not, one should be consulted early in the course.

- A hematologist and a neurologist may be able to assist with the patient's care.

## Diet

Since dietary aluminum is ubiquitous, there are no specific dietary guidelines for its avoidance. Special diets should be maintained for specific associated disease entities (eg, diabetes, renal failure).

## Activity

Activity modification may not be necessary unless the patient is at risk for frequent falls. If this is the case, a home attendant or family member should assist the patient with daily living activities.

## Medication

The goals of pharmacotherapy are to reduce morbidity and to prevent complications.

### Metal chelators

Bind free metal and do not chelate other trace metals of nutritional importance. <sup>\*</sup>Metals are excreted in the urine and bile.

### Deferoxamine mesylate (Desferal mesylate)

Metal-free ligand of the iron chelate isolated from the bacterium *S pilosus*. Used for acute and chronic iron toxicity as well as aluminum toxicity and has a high affinity for ferric iron. Does not affect iron in cytochromes or hemoglobin. PO/IM administration not established. Several case reports and cohorts using varying doses indicate effectiveness when administered IV.

### Dosing

#### Adult

6 g/wk average at 14.5 mg/kg/h IV 3 times/wk during first 2 h of dialysis or 85 mg/kg/wk at 14.5 mg/kg/h IV

CAPD: 500-750 mg added to each 2-L bag of dialysate for approximately 2 mo; varying amount of exchanges using deferoxamine (eg, only hs, once/d) would prolong therapy; alternatively, administer prolonged SC infusion over 8-16 h via pump

#### Pediatric

Not established; consult nephrologist

### Interactions

Vitamin C >500 mg/d can cause cardiac dysfunction; concomitant administration with prochlorperazine can cause transient loss of consciousness; gallium-67 scanning results can be affected

### Contraindications

Documented hypersensitivity, profound hypotension, anuria, and severe renal disease without ability to dialyze

### Precautions

#### Pregnancy

C - Safety for use during pregnancy has not been established.

### Precautions

Tachycardia, hypotension, and shock may occur in patients receiving long-term therapy and could add to the cardiovascular collapse due to iron toxicity; adverse GI effects of the drug include abdominal discomfort, nausea, vomiting, and diarrhea, which may add to the symptoms of acute iron toxicity; flushing and fever are reported

### Follow-up

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#### Deterrence/Prevention:

- Avoid all aluminum-containing antacids, antiperspirants, dialysate, immunizations, and TPN solutions.

#### Complications:

- See Clinical.

#### Prognosis:

- Depending upon the degree of dementia and overall medical frailty of the patient, most improve in with deferoxamine therapy. Some patients, however, succumb to their underlying disease processes before any noticeable improvement in mental status or anemia occurs. Whether aluminum toxicity itself is fatal is unknown. Typically, patients' underlying diseases and medical frailty lead to early morbidity and mortality.

#### Patient Education:

- Educate pregnant and breastfeeding females, and any patient with compromised renal function, about the use of aluminum-containing antacids and the potential dangers of their use and overuse. A safe alternative includes calcium carbonate, such as found in Tums.
- Educate patients to refrain from driving or operating hazardous machinery if they develop dizziness or impaired vision or hearing during treatment.

### Miscellaneous

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#### Medicolegal Pitfalls

- Failure to educate a pregnant female, particularly in her first trimester, about potential damage to the fetus
- Misdiagnosing abuse in a child or elderly patient with a pathologic rib fracture when the injury is actually secondary to renal/aluminum osteodystrophy
- Prescribing an aluminum-containing antacid to a patient with impaired renal function
- Failure to advise patients to refrain from driving or operating hazardous machinery if dizziness, impaired vision or hearing, or other nervous-system dysfunction develops.

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## Keywords

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\* aluminum toxicity, hyperaluminosis, aluminum-related illness, aluminum concentration, aluminum intoxication, aluminum clearance, aluminum-related disease, dialysis osteodystrophy, dialysis encephalopathy, aluminum deposition, microcytic anemia, chromophilic cells, basophilic stippling, deferoxamine therapy

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**Further Reading**

**Clinical guidelines**

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Clinical trial

Aluminum and Auditory Function in ESRD .

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