***Delaware Technical Community College***

***Turn Over Report***

***March 1st, 2011***

***Avani Environmental Intl., Inc***

***95 Cypress Dr.***

***Youngsville, NC 27596***

Submitted By:

William W. Boisvert

Project Manager

1. A walk down of installed equipment and training on the installed equipment was held on March 1st, 2001. At this session where member from Emory Hill, Delaware Tech. and Avani Environmental Intl., Inc.
2. Down Drift Table – SWT-2000 SN: 083101, 07/2008 (this an older Model SWT-2000 and has the following characteristics)
	1. Automatic Pulse Board plus Manual Pulse Push Button
	2. With the fan in operation the automatic pulse board can be set for a pulse interval from 10 minutes to 150 minutes with 10 minute intervals. (10, 20, 30, 40, etc.)
	3. After setting the time, the setting is only held until the fan is stopped. At that time the setting reverts to 10 minutes.
	4. The air pressure was set at 75 psi.
	5. Grounding Lug on left side of table.
	6. 6” arm with shut off damper
	7. Down draft section with shut out damper
3. Down Draft Table – SWT-2000 SN: 103409, 08/2010 (this is the new style and has the following characteristics)
	1. Start – Stop push button
	2. Manual Pulse Push Button
	3. Megnahelic Filter Dp Gauge
	4. The air pressure was set at 75 psi.
	5. Grounding Lug on left side of table.
	6. 6” arm with shut off damper
	7. Down draft section with shut out damper
4. Avani Type I Dust Collector – SDC-15D-12 – SN: 110205 (Jan. 06, 2011)
	1. Collector has inspected and found to need screens at the fan outlets, will supply.
	2. Wired fan wires in control panel and inspected at connections, Sat.
	3. Ran fans and checked for proper fan rotation, both fans correct.
	4. Reviewed startup and shut down of fans.
	5. Checked operation of the pulse system. At initial startup the pulse control board seemed to be stuck on one functi0on and was trying to fire pulse valve #1 continuously. After approximately one hour of testing the problem cleared and the board worked perfectly the rest of the day. Board needs to be check periodically and reported to Avani if any problems are seen.
	6. Training on setting of the board was performed.
	7. Pulse interval was set at 300 sec.
	8. Pulse pressure set at 80PSI
5. Sound Study
	1. Sound levels were taken in the center of each welding booth, at a height of five feet, over the welding table. Levels were taken with the collector shut down and with the collector in operation.

Note: For this report booths will be numbered 1 through 10 starting at the wall nearest the collector and going counter-clockwise around the room to the welding lab entrance doors.

* 1. Sound levels were as follows:
		1. Booth #1 – Collector Off – 57db, Collector On – 76db
		2. Booth #2 – Collector Off – 58db, Collector On – 77db
		3. Booth #3 – Collector Off – 58db, Collector On – 77db
		4. Booth #4 – Collector Off – 58db, Collector On – 78db
		5. Booth #5 – Collector Off – 59db, Collector On – 77db
		6. Booth #6 – Collector Off – 60db, Collector On – 78db
		7. Booth #7 – Collector Off – 58db, Collector On – 78db
		8. Booth #8 – Collector Off – 58db, Collector On – 78db
		9. Booth #9 – Collector Off – 57db, Collector On – 77db
		10. Booth #10 – Collector Off – 58db, Collector On – 77db
1. Air Flow Testing
	1. Air flow testing was performed using a pitot tube and a Dwyer series 465 Mark III Digital Manometer.
	2. The air flow data taken in shown below is tabular form. Each reading shows the total flow at that point and steps down one drop at a time. For example Test Point #1 shows the total system flow and Test point #2 shows the flow minus the drop in booth #1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Location # | Trunk Line Point 1 |  |  | Location # | Trunk Line Point 2 |  |
| Test Point | VP | V | CFM |  | Test Point | VP | V | CFM |
| 1 | 0.55 | 2970 | 5246 |  | 1 | 0.45 | 2687 | 4745 |
| 2 | 0.54 | 2943 | 5198 |  | 2 | 0.46 | 2716 | 4798 |
| 3 | 0.55 | 2970 | 5246 |  | 3 | 0.47 | 2746 | 4850 |
| 4 | 0.54 | 2943 | 5198 |  | 4 | 0.44 | 2657 | 4692 |
| 5 | 0.52 | 2888 | 5101 |  | 5 | 0.45 | 2687 | 4745 |
| 6 |  | 0 | 0 |  | 6 |  | 0 | 0 |
| Average | 0.54 | 2943 | 5198 |  | Average | 0.45 | 2699 | 4766 |
| Duct Area: | 1.77 |  |  |  | Duct Area: | 1.77 |  |  |
|  |  |  |  |  |  |  |  |  |
| Length | Width | Area SF |  |  | Length | Width | Area SF |  |
|  |  | 0.00 |  |  |  |  | 0.00 |  |
|  | Diameter |  |  |  |  | Diameter |  |  |
|  | 18 | 1.77 |  |  |  | 18 | 1.77 |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Location # | Trunk Line Point 3 |  |  | Location # | Trunk Line Point 4 |  |
| Test Point | VP | V | CFM |  | Test Point | VP | V | CFM |
| 1 | 0.58 | 3050 | 4257 |  | 1 | 0.58 | 3050 | 3741 |
| 2 | 0.52 | 2888 | 4030 |  | 2 | 0.55 | 2970 | 3643 |
| 3 | 0.54 | 2943 | 4107 |  | 3 | 0.50 | 2832 | 3474 |
| 4 | 0.55 | 2970 | 4145 |  | 4 | 0.55 | 2970 | 3643 |
| 5 | 0.53 | 2916 | 4069 |  | 5 | 0.50 | 2832 | 3474 |
| 6 |  | 0 | 0 |  | 6 |  | 0 | 0 |
| Average | 0.54 | 2954 | 4122 |  | Average | 0.54 | 2932 | 3596 |
| Duct Area: | 1.40 |  |  |  | Duct Area: | 1.23 |  |  |
|  |  |  |  |  |  |  |  |  |
| Length | Width | Area SF |  |  | Length | Width | Area SF |  |
|  |  | 0.00 |  |  |  |  | 0.00 |  |
|  | Diameter |  |  |  |  | Diameter |  |  |
|  | 16 | 1.40 |  |  |  | 15 | 1.23 |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Location # | Trunk Line Point 5 |  |  | Location # | Trunk Line Point 6 |  |
| Test Point | VP | V | CFM |  | Test Point | VP | V | CFM |
| 1 | 0.55 | 2970 | 3174 |  | 1 | 0.65 | 3229 | 2535 |
| 2 | 0.56 | 2997 | 3202 |  | 2 | 0.60 | 3102 | 2435 |
| 3 | 0.55 | 2970 | 3174 |  | 3 | 0.62 | 3154 | 2476 |
| 4 | 0.50 | 2832 | 3026 |  | 4 | 0.63 | 3179 | 2495 |
| 5 | 0.52 | 2888 | 3086 |  | 5 | 0.63 | 3179 | 2495 |
| 6 |  | 0 | 0 |  | 6 |  | 0 | 0 |
| Average | 0.54 | 2932 | 3133 |  | Average | 0.63 | 3169 | 2487 |
| Duct Area: | 1.07 |  |  |  | Duct Area: | 0.79 |  |  |
|  |  |  |  |  |  |  |  |  |
| Length | Width | Area SF |  |  | Length | Width | Area SF |  |
|  |  | 0.00 |  |  |  |  | 0.00 |  |
|  | Diameter |  |  |  |  | Diameter |  |  |
|  | 14 | 1.07 |  |  |  | 12 | 0.79 |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Location # | Trunk Line Point 7 |  |  | Location # | Trunk Line Point 8 |  |
| Test Point | VP | V | CFM |  | Test Point | VP | V | CFM |
| 1 | 0.66 | 3254 | 2146 |  | 1 | 0.44 | 2657 | 1173 |
| 2 | 0.60 | 3102 | 2046 |  | 2 | 0.76 | 3491 | 1542 |
| 3 | 0.57 | 3024 | 1994 |  | 3 | 0.55 | 2970 | 1312 |
| 4 | 0.59 | 3076 | 2029 |  | 4 | 0.55 | 2970 | 1312 |
| 5 | 0.62 | 3154 | 2080 |  | 5 | 0.53 | 2916 | 1287 |
| 6 |  | 0 | 0 |  | 6 |  | 0 | 0 |
| Average | 0.61 | 3123 | 2060 |  | Average | 0.57 | 3013 | 1330 |
| Duct Area: | 0.66 |  |  |  | Duct Area: | 0.44 |  |  |
|  |  |  |  |  |  |  |  |  |
| Length | Width | Area SF |  |  | Length | Width | Area SF |  |
|  |  | 0.00 |  |  |  |  | 0.00 |  |
|  | Diameter |  |  |  |  | Diameter |  |  |
|  | 11 | 0.66 |  |  |  | 9 | 0.44 |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Location # | Trunk Line Point 9 |  |  | Location # | Trunk Line Point 10 |  |
| Test Point | VP | V | CFM |  | Test Point | VP | V | CFM |
| 1 | 0.69 | 3327 | 1161 |  | 1 | 0.50 | 2832 | 556 |
| 2 | 0.70 | 3351 | 1169 |  | 2 | 0.51 | 2860 | 561 |
| 3 | 0.73 | 3422 | 1194 |  | 3 | 0.55 | 2970 | 583 |
| 4 | 0.70 | 3351 | 1169 |  | 4 | 0.53 | 2916 | 572 |
| 5 | 0.71 | 3375 | 1177 |  | 5 | 0.52 | 2888 | 567 |
| 6 |  | 0 | 0 |  | 6 |  | 0 | 0 |
| Average | 0.71 | 3365 | 1174 |  | Average | 0.52 | 2894 | 568 |
| Duct Area: | 0.35 |  |  |  | Duct Area: | 0.20 |  |  |
|  |  |  |  |  |  |  |  |  |
| Length | Width | Area SF |  |  | Length | Width | Area SF |  |
|  |  | 0.00 |  |  |  |  | 0.00 |  |
|  | Diameter |  |  |  |  | Diameter |  |  |
|  | 8 | 0.35 |  |  |  | 6 | 0.20 |  |

* 1. The above results show that Air flow reading at each drop is approximately 500CFM.
	2. This was also checked using a rotary vane anemometer held up inside of a few of the arms. This also show a flow around 500CFM.
1. Punch List Items
	1. Item #1 – Sending two screens to be installed by Emory Hill
	2. Item # 4 & #5 – Cleaned shop area and outside area prior to leaving on 3/1/2011
	3. Item #6 – Duct penetrations were sealed on the afternoon of 3/1/2011
	4. Item #7 – Provided
	5. Item #8 – Completed by this report

Please let us know if we can be of any further assistance.

Thanks,

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