

**Total Dust Monitoring
in the
Dexter Horton Building
For
Pinnacle Realty
Management Company
Seattle, Washington**

September 6, 2001

Clayton Project No.75-02024.00

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EXECUTIVE SUMMARY

On August 28, 2001, Clayton Group Services, Inc. (Clayton) conducted total dust monitoring in the Dexter Horton Building in Seattle Washington. Construction from remodeling activities and unrepaired earthquake damage continue to introduce particulate into the building's air. The highest concentrations of total particulate were found in the lobbies and stairwells, however, these levels are below guidelines recommended by the American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE). Dust levels in the office areas continue to be very low.

1.0 INTRODUCTION

Ms. Donna Byers from Pinnacle Realty Management Company authorized Clayton Group Services, Inc. (Clayton) to conduct total dust monitoring in the Dexter Horton Building in Seattle, Washington.

Barb Faville, Certified Industrial Hygienist from Clayton, and Sonya Manejkowski, Industrial Hygienist, conducted the survey on August 28, 2001. Clayton conducted real-time total particulate (dust) sampling to determine airborne levels of dust. Due to remodeling activities in the building and large areas of plaster that had fallen off the walls during the earthquake on February 28, 2001, Pinnacle had received complaints about the air quality from the building occupants.

This report presents the results and recommendations based on the observations and findings obtained during the August survey. The report dated June 7, 2001 should be consulted for a more detailed discussion of construction activities and earthquake related damage.

2.0 OBSERVATIONS

Construction Activities

At the time of the survey on August 28, all construction activity associated with the seismic upgrades had been concluded. A limited amount of "construction" activity was observed but these activities were associated with building remodel on the fourth and seventh floors and very limited amounts of dust are expected from these activities.

Earthquake Damage

Repair work is still to be completed on the walls and exposed masonry and some broken plaster was observed in the building. No dust piles from plaster were observed.

3.0 METHODS AND PROCEDURES

A TSI DustTrak was used to determine dust concentrations. The DustTrak is designed for indoor air quality investigations and is able to measure dust concentrations as low as 0.001 milligrams per cubic meter of air (mg/m³). On August 28, 2001, the DustTrak was used to monitor the air in 101 areas of the building. The DustTrak instrument provides an instantaneous reading so no further analysis of the sample is required. This method allows the entire building to be monitored in a single day.

4.0 RESULTS AND DISCUSSION

The results of the DustTrak monitoring were very low. All values were below the recommended guideline of 0.075 mg/m³. The results of the DustTrak sampling are listed in Table 1 in Appendix A.

Two sets of standards are used to interpret the total particulate or dust results. The Washington State Labor and Industries (WISHA) standards has established a permissible exposure limit of 10 mg/m³ for total particulate in air. This standard is usually intended for industrial work places and does not apply well to non-industrial environments.

The second set of guidelines was developed by the American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE) and is intended for use with indoor air quality evaluations. The guidelines are not legal limits, just recommendations that have been developed to assist in determining if indoor air is likely to produce complaints. ASHRAE has established a guideline of 0.075 mg/m³ for total particulate in indoor air.

The DustTrak results in the suite areas ranged from 0.008 to 0.045 mg/m³. The highest total particulate concentration was monitored in the Seattle Personnel Office which had an open door to the lobby, with several people walking around. Dust levels in other suite areas were below 0.019 mg/m³, except for suite 326, near a door open to the street, which read 0.040 mg/m³. The concentrations are quite low and are consistent with levels found in most office areas.

Particulate concentrations ranged from 0.013 to 0.052 mg/m³ in the lobbies and stairwells. The highest reading, 0.052 mg/m³, noted on the 14th Floor east stairwell landing, was lower than last month's highest reading which was 0.080 mg/ m³. These levels are not unexpected for high traffic (lobbies) and limited ventilation (stairwells) areas.

There was an improvement in the total dust readings taken on August 28, 2001 in the third floor east and west stairwell and the 2nd floor west stairwell mezzanine landing compared to those taken on May 31st and on July 31st. However, dust levels were slightly higher on the 7th and 15th floor lobbies on August 28 compared to July 31. Remodeling probably accounts for a slight increase in most readings for the otherwise unoccupied 7th floor.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Total particulate concentrations throughout the building were well below WISHA Permissible Exposure Limits (PELs) and all the readings were below ASHRAE's recommended limit of 0.075 milligrams per cubic meter (mg/m^3) for indoor air.

Clayton recommends the following action to assist Pinnacle with providing acceptable air quality in the Dexter Horton building and preventing total particulate exposures to employees:

- If the dust in the lobbies and stairwells continue to generate complaints or concerns, a thorough vacuuming or wet cleaning of these areas may be required to remove existing dust.

It has been a pleasure serving Pinnacle Realty Management Company on this project. Please call me at 206-763-7364 if you have any questions regarding this report. Future air sampling results will be communicated in a separate report.

Report prepared by:

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APPENDIX A

MONITORING RESULTS

Table 1
Airborne Dust Monitoring – TSI DustTrac
Dexter Horton Building
August 28, 2001
Project #: 75-02024.00

Location	Concentration (mg/m ³)
Basement:	
Outside Basement Board Room	0.026
2nd Floor:	
Lobby, across from elevator #1	0.025
Lobby, across from elevator #6	0.017
West stairwell, mezzanine landing	0.016
3rd Floor:	
West stairwell, landing	0.020
Lobby, outside suite 312	0.039
Lobby, across from elevator #3	0.030
Lobby, outside suite 326	0.035
In Suite 326 (door open)	0.040
In Suite 331 (door to street open)	0.038
East stairwell, landing	0.040
4th Floor:	
East stairwell, landing	0.034
Lobby, east end by restrooms	0.015
Lobby, across from elevator #4	0.013
Suite 400, copy/duplicating room lobby	0.014
Suite 400, by refrigerator & microwave	0.014
Suite 400, back hallway by T. Johnson's office	0.019
Suite 400, by windows and M. Lafond's office	0.019
Suite 400, by paper cutter	0.016
Suite 400, by I. Edelstein's desk	0.013
Suite 400, in copy center	0.015
Lobby, outside suite 450	0.013
West stairwell, landing	0.017
5th Floor:	
West stairwell, landing	0.017
Lobby, west end	0.023
Lobby, across from elevator # 6	0.024
Lobby, east end	0.015
East stairwell, landing	0.029
6th Floor:	
East stairwell, landing	0.027
Lobby, east end	0.014
Suite 660, reception area	0.009

Table 1 - Continued

Location	Concentration (mg/m ³)
Suite 660, by conference room 6D	0.006
Suite 660, end of hall by printer	0.009
Suite 660, by microfiche	0.005
Suite 660, outside A. Mezas' office	0.009
Suite 660, outside C. Albarracin's office and coat rack	0.008
Lobby, across from elevator #3	0.021
Lobby, west end, outside Suite 610	0.027
West stairwell, landing	0.020
7th Floor:	
West stairwell, landing	0.023
Lobby, west end	0.034
Lobby, across from elevator #3	0.036
Lobby, east end by restrooms	0.036
East stairwell, landing	0.044
8th Floor:	
East stairwell, landing	0.041
Lobby, east end	0.031
Court Room lobby	Locked
Lobby, across from elevator #4	0.034
Lobby, west end	0.015
West stairwell, landing	0.028
9th Floor:	
West stairwell, landing	0.028
End of hall by Suite 900 - Conference Room	0.018
Lobby, across from elevator #4	0.023
Reception area	0.011
B-wing, by B. Booker's cube	0.015
B-wing, by L. Santos's cube	0.011
Between A- and B-wing, by windows	0.010
A-wing, by K. Evans's cube	0.010
A-wing, end of wing by printer	0.011
A-wing, by A. Claxton's cube and fire extinguisher	0.013
C-wing, by clock and fire extinguisher	0.009
C-wing, by printer	0.008
D-wing, by R. Butler's cube	0.011
D-wing, end of wing by printer	0.008
D-wing, by exit door, printer, and recycle receptacles	0.008
Lobby, east end by trophy case and mail chute	0.025
East stairwell, landing	0.040
10th Floor:	
East stairwell, landing	0.039
Lobby, east end	0.032

Table 1 - Continued

Location	Concentration (mg/m ³)
Lobby, across from elevator #3	0.026
Lobby, outside Director's office	0.030
West stairwell, landing	0.023
11th Floor:	
West stairwell, landing	0.036
Lobby, outside Suite 1110	0.027
Lobby, across from elevator #1	0.025
Copy room off of lobby	0.026
Lobby, east end	0.034
East stairwell, landing	0.040
12th Floor:	
East stairwell, landing	0.030
Lobby, east end	0.023
Seattle Personnel Office, reception area (door is propped open, several people walking by)	0.045
B wing, at J. Griffith cube	0.011
Lobby, across from elevator #2	0.024
Lobby, west end, near Suite 1200	0.023
West stairwell, landing	0.029
13th Floor:	
West stairwell, landing	0.025
Lobby, west end	0.038
Lobby across from elevator #6	0.035
HRIS reception, door propped open	0.034
Lobby, east end	0.030
East stairwell, landing	0.045
14th Floor:	
East stairwell, landing	0.052
Lobby, east end	0.027
Lobby, across from elevator #4	0.029
Seattle Law Department, reception area (door propped open)	0.026
Lobby, west end	0.026
West stairwell, landing	0.036
15th Floor:	
West stairwell, landing	0.022
Lobby, west end	0.029
Lobby, across from elevator #4	0.030
Lobby, east end	0.026
East stairwell, landing	0.031

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American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE) Standard 62-1999 and Clayton Group Services internal standard

0.075