



DEPARTMENT OF THE NAVY
NAVAL HOSPITAL
937 FRANKLIN AVE.
LEMOORE, CALIFORNIA 93246-5004

IN REPLY REFER TO:

6260
G1A/0454
22 Aug 12

From: Commanding Officer, Naval Hospital, Lemoore
To: Chief Of Staff, Naval Postgraduate School,
1 University Circle, Monterey CA 93943

Subj: BASELINE INDUSTRIAL HYGIENE SURVEY, MISCELLANEOUS NAVAL
POSTGRADUATE SCHOOL, MONTEREY SPANAGEL HALL AREAS

Ref: (a) OPNAVINST 5100.23G, Chapter 8

Encl: (1) Industrial Hygiene Survey Report 66271-12-4

1. Per reference (a), a baseline industrial hygiene survey of the miscellaneous Naval Postgraduate School, Monterey, Spanagel Hall, was conducted by the Naval Hospital, Lemoore, Monterey area Industrial Hygienist on 20 and 21 June 2012.

2. No corrective actions are necessary, and the next industrial hygiene survey of these areas is due in Calendar Year 2016.

3. If further consultation on this report is needed, please contact S. Eric Thurston, Industrial Hygienist at Commercial (831) 656-1074, e-mail sethurst@nps.edu.

H. W. CHO
By direction

Copy to:
NPS GSEAS Assoc Mil Dean
NPS GSEAS Safe Coord
NPS NAVOSH Dir
NHL/IH

2012 Industrial Hygiene Survey
Of
Naval Postgraduate School, Monterey
Miscellaneous Spanagel Hall Departments
Report 62271-12-4
20 and 21 June 2012

Survey Conducted by:

S. Eric Thurston,
Industrial Hygienist

Survey Reviewed and Approved by:

Michael J. Puckett, MPH, REHS
Supervisory Industrial
Hygienist

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Report 62271-12-4
EXECUTIVE SUMMARY

1. The 2012 baseline industrial hygiene survey of the miscellaneous Naval Postgraduate School, Monterey, Spanagel Hall departments was recently conducted.

2. There were no Findings, and corrective actions are unnecessary.

3. Per the guidance provided by OPNAVINST 5100.23G, Chapter 8, Appendix 8-B, administrative spaces only need to be reviewed on a 4-year cycle, and therefore the next survey of these areas is due in Calendar Year 2016.

DISCUSSION, FINDINGS AND RECOMMENDATIONS

References: (a) OPNAVINST 5100.23G

As required by Chapter 8 of reference (a), a baseline industrial hygiene of the miscellaneous Naval Postgraduate School, Monterey, Spanagel Hall areas was conducted on 20 and 21 June 2012. The primary purpose of this survey was to identify and assess exposure to occupational hazards, review the occupational health portion of the NAVOSH program, and update the Exposure Monitoring Plan.

A. ENGINEERING CONTROLS: None observed or needed.

B. HAZARDOUS MATERIAL CONTROL AND MANAGEMENT PROGRAM: The only chemicals used are office products. Exposure to chemical ingredients in office products will not result in significant exposures if used in the normal and intended manner and manufacturer instructions for their proper use are followed.

C. HEARING CONSERVATION PROGRAM: There are no sources of hazardous noise in these spaces.

D. RESPIRATORY PROTECTION PROGRAM: Operations requiring the use of respirators are not performed in this department, and personnel do not wear them on an elective basis.

E. PERSONAL PROTECTIVE EQUIPMENT: None observed or necessary.

F. NON-IONIZING RADIATION CONTROL PROGRAM: There are not sources of non-ionizing radiation in the areas reviewed.

G. OCCUPATIONAL REPRODUCTIVE HAZARDS PROGRAM: There are no sources of occupational reproductive hazards in the areas reviewed.

H. ERGONOMICS: Per OPNAVINST 5100.23G, Chapter 8, paragraph 0802c(3) there are no ergonomic stressors that would present significant risk and per Chapter 23, Appendix 23-B, workers reporting pain or discomfort from computer use have not been referred to the Industrial Hygienist.

I. MEDICAL SURVEILLANCE MATRIX: Enrollment in medical surveillance programs is not recommended based upon the results of this survey.

J. TRAINING MATRIX: The only training recommendation for personnel in these departments besides Office Ergonomics, ESAMS Training Module 3030. Additional training for safety-related hazards or based on other requirements may be identified separately by the NPS Safety and Occupational Health Office, or as automatically prescribed by the Enterprise Safety and Application Management System (ESAMS) when the user logs onto his or her account.

APPENDIX A

IH EXPOSURE ASSESSMENT/MONITORING PLAN				
WORKPLACE INFORMATION				
Organization: Naval Postgraduate School		Dept: Mathematics		Work Center: -----
Location: Bldg 232		Supervisor: Carlos Borges		Phone: 831-656-2124
Workers: 27		Male: 22		Female: 5
<p>Operations: These areas consist of the following and only administrative tasks and teaching classes are performed.</p> <p>Offices: Rooms 238A,238B,240A,240B,241A,241B,241C,242A,242B,243A,244,246,248A,248B,250,254,258,260,262,263B,263C,264,266,268,270</p> <p>Conference Room: Room 257</p> <p>Storage Rooms: Rooms 256,259</p> <p>Computer Lab: Room 263</p> <p>Copy Room: Room 243B</p>				
WORK TASK	POTENTIAL HAZARD	WORKERS INVOLVD	FREQUENCY/DURATION	MONITORING RECOMMENDED?
	None			
IH EXPOSURE ASSESSMENT (EA)				
<p>NOISE: There are no sources of hazardous noise in these spaces.</p> <p>CHEMICALS: The only chemical products encountered are those associated with office products, including the toner cartridges used with printers and copy machines. Exposure to chemical ingredients in the toner, as well as those in other office products, will not result in significant exposures if used in the normal and intended manner and manufacturer instructions for their proper use are followed.</p> <p>RADIATION: There are no sources of ionizing or non-ionizing radiation in these spaces.</p> <p>PERSONAL PROTECTIVE EQUIPMENT (PPE): None worn or necessary.</p> <p>ENGINEERING CONTROLS: None present or required.</p> <p>RESPIRATORY PROTECTION PROGRAM: Operations performed do not require use of respirators, and they are not worn on an elective basis.</p> <p>ERGONOMICS: Per OPNAVINST 5100.23G, Chapter 8, paragraph 0802c(3) there are no ergonomic stressors that would present <u>significant</u> risk and per Chapter 23, Appendix 23-B, workers reporting pain or discomfort from computer use have not been referred to the Industrial Hygienist.</p>				

IH EXPOSURE ASSESSMENT/MONITORING PLAN

WORKPLACE INFORMATION

Organization: Naval Postgraduate School		Dept: Mathematics		Work Center: -----	
POTENTIAL HAZARD	NUMBER OF MEASUREMENTS	METHOD OF MEASUREMENT 1	METHOD OF MEASUREMENT 2	FREQUENCY (per year)	MAN-HOURS (per year)
None					
Use the following codes: not applicable at this time.					
Signature: <i>Signed/</i> S. Eric Thurston, Industrial Hygienist			Date: 21 June 2012		

IH EXPOSURE ASSESSMENT/MONITORING PLAN

WORKPLACE INFORMATION

Organization: Naval Postgraduate School	Dept: GSEAS	Work Center: Administrative Spaces
Location: Bldg 232	Supervisor: Phil Durkee	Phone: 831-656-2517
Workers: 21	Male: 17	Female: 4
Operations: These areas consist of the following and only administrative tasks are performed. <u>Offices:</u> Rooms 230A,234,235 through 253B,537 <u>Classrooms:</u> Room 408,421 <u>Network Closet:</u> Room 538		

WORK TASK	POTENTIAL HAZARD	WORKERS INVOLVD	FREQUENCY/DURATION	MONITORING RECOMMENDED?
	None			

IH EXPOSURE ASSESSMENT (EA)

NOISE: There are no sources of hazardous noise in these spaces.

CHEMICALS: The only chemical products encountered are those associated with office products, including the toner cartridges used with printers and copy machines. Exposure to chemical ingredients in the toner, as well as those in other office products, will not result in significant exposures if used in the normal and intended manner and manufacturer instructions for their proper use are followed.

RADIATION: There are no sources of ionizing or non-ionizing radiation in these spaces.

PERSONAL PROTECTIVE EQUIPMENT (PPE): None worn or necessary.

ENGINEERING CONTROLS: None present or required.

RESPIRATORY PROTECTION PROGRAM: Operations performed do not require use of respirators, and they are not worn on an elective basis.

ERGONOMICS: Per OPNAVINST 5100.23G, Chapter 8, paragraph 0802c(3) there are no ergonomic stressors that would present significant risk and per Chapter 23, Appendix 23-B, workers reporting pain or discomfort from computer use have not been referred to the Industrial Hygienist.

POTENTIAL HAZARD	NUMBER OF MEASUREMENTS	METHOD OF MEASUREMENT 1	METHOD OF MEASUREMENT 2	FREQUENCY (per year)	MAN-HOURS (per year)
None					

Use the following codes: not applicable at this time.

Signature: Signed/ S. Eric Thurston, Industrial Hygienist	Date: 21 June 2012
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IH EXPOSURE ASSESSMENT/MONITORING PLAN

WORKPLACE INFORMATION

Organization: Naval Postgraduate School	Dept: Center For Cyber Warfare	Work Center: ----- ---
Location: Bldg 232, Rm 400	Supervisor: Jeffrey Knorr	Phone: 831-656-2815
Workers: 11	Male: 11	Female: 0

Operations: This center is comprised of members from the Electrical/Computer Engineering, Computer Sciences, and Physics Departments, and all work involves use of computer systems and networks.

WORK TASK	POTENTIAL HAZARD	WORKERS INVOLVD	FREQUENCY/DURATION	MONITORING RECOMMENDED?
	None			

IH EXPOSURE ASSESSMENT (EA)

NOISE: There are no sources of hazardous noise in these spaces.

CHEMICALS: The only chemical products encountered are those associated with office products, including the toner cartridges used with printers and copy machines. Exposure to chemical ingredients in the toner, as well as those in other office products, will not result in significant exposures if used in the normal and intended manner and manufacturer instructions for their proper use are followed.

RADIATION: There are no sources of ionizing or non-ionizing radiation in these spaces.

PERSONAL PROTECTIVE EQUIPMENT (PPE): None worn or necessary.

ENGINEERING CONTROLS: None present or required.

RESPIRATORY PROTECTION PROGRAM: Operations performed do not require use of respirators, and they are not worn on an elective basis.

ERGONOMICS: Per OPNAVINST 5100.23G, Chapter 8, paragraph 0802c(3) there are no ergonomic stressors that would present significant risk and per Chapter 23, Appendix 23-B, workers reporting pain or discomfort from computer use have not been referred to the Industrial Hygienist.

POTENTIAL HAZARD	NUMBER OF MEASUREMENTS	METHOD OF MEASUREMENT 1	METHOD OF MEASUREMENT 2	FREQUENCY (per year)	MAN-HOURS (per year)
None					

Use the following codes: not applicable at this time.

Signature: Signed/ S. Eric Thurston, Industrial Hygienist	Date: 21 June 2012
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IH EXPOSURE ASSESSMENT/MONITORING PLAN

WORKPLACE INFORMATION

Organization: Naval Postgraduate School	Dept: Remote Sensing Center	Work Center: ----- ---
Location: Bldg 232, Rm 400	Supervisor: Richard Olsen	Phone: 831-656-2019
Workers: 13	Male: 7	Female: 6

Operations: This center is comprised of members from the Electrical/Computer Engineering, Computer Sciences, Meteorology, Physics, and Oceanography Departments. Current projects include analysis of data collected from the Physics LIDAR Lab and program, spectral imagery, and SCIF area of the Security Management Department.

WORK TASK	POTENTIAL HAZARD	WORKERS INVOLVD	FREQUENCY/DURATION	MONITORING RECOMMENDED?
	None			

IH EXPOSURE ASSESSMENT (EA)

NOISE: There are no sources of hazardous noise in these spaces.

CHEMICALS: The only chemical products encountered are those associated with office products, including the toner cartridges used with printers and copy machines. Exposure to chemical ingredients in the toner, as well as those in other office products, will not result in significant exposures if used in the normal and intended manner and manufacturer instructions for their proper use are followed.

RADIATION: There are no sources of ionizing or non-ionizing radiation in these spaces.

PERSONAL PROTECTIVE EQUIPMENT (PPE): None worn or necessary.

ENGINEERING CONTROLS: None present or required.

RESPIRATORY PROTECTION PROGRAM: Operations performed do not require use of respirators, and they are not worn on an elective basis.

ERGONOMICS: Per OPNAVINST 5100.23G, Chapter 8, paragraph 0802c(3) there are no ergonomic stressors that would present significant risk and per Chapter 23, Appendix 23-B, workers reporting pain or discomfort from computer use have not been referred to the Industrial Hygienist.

POTENTIAL HAZARD	NUMBER OF MEASUREMENTS	METHOD OF MEASUREMENT 1	METHOD OF MEASUREMENT 2	FREQUENCY (per year)	MAN-HOURS (per year)
None					

Use the following codes: not applicable at this time.

Signature: **Signed/**
S. Eric Thurston, Industrial Hygienist

Date: 20 June 2012

IH EXPOSURE ASSESSMENT/MONITORING PLAN

WORKPLACE INFORMATION

Organization: Naval Postgraduate School	Dept: National Security Institute	Work Center: ----- ---
Location: Bldg 232, Rm 101A	Supervisor: Dan Boger	Phone: 831-656-3671
Workers: 9	Male: 9	Female: 0

Operations: This center involves research on security matters.

WORK TASK	POTENTIAL HAZARD	WORKERS INVOLVD	FREQUENCY/DURATION	MONITORING RECOMMENDED?
	None			

IH EXPOSURE ASSESSMENT (EA)

NOISE: There are no sources of hazardous noise in these spaces.

CHEMICALS: The only chemical products encountered are those associated with office products, including the toner cartridges used with printers and copy machines. Exposure to chemical ingredients in the toner, as well as those in other office products, will not result in significant exposures if used in the normal and intended manner and manufacturer instructions for their proper use are followed.

RADIATION: There are no sources of ionizing or non-ionizing radiation in these spaces.

PERSONAL PROTECTIVE EQUIPMENT (PPE): None worn or necessary.

ENGINEERING CONTROLS: None present or required.

RESPIRATORY PROTECTION PROGRAM: Operations performed do not require use of respirators, and they are not worn on an elective basis.

ERGONOMICS: Per OPNAVINST 5100.23G, Chapter 8, paragraph 0802c(3) there are no ergonomic stressors that would present significant risk and per Chapter 23, Appendix 23-B, workers reporting pain or discomfort from computer use have not been referred to the Industrial Hygienist.

POTENTIAL HAZARD	NUMBER OF MEASUREMENTS	METHOD OF MEASUREMENT 1	METHOD OF MEASUREMENT 2	FREQUENCY (per year)	MAN-HOURS (per year)
None					

Use the following codes: not applicable at this time.

Signature: Signed/ S. Eric Thurston, Industrial Hygienist	Date: 20 June 2012
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IH EXPOSURE ASSESSMENT/MONITORING PLAN

WORKPLACE INFORMATION

Organization: Naval Postgraduate School	Dept: Information Resources	Work Center: Lab/ Client Support
Location: Bldg 232	Supervisor: Joe Lopiccolo	Phone: 831-656-2994
Workers: 8	Male: 7	Female: 1

Operations: Provides support to academic applications and clients in several buildings on the NPS campus, and one of the spaces they occupy is Room 431, the ECE ITACS Learning Classroom.

WORK TASK	POTENTIAL HAZARD	WORKERS INVOLVD	FREQUENCY/DURATION	MONITORING RECOMMENDED?
	None			

IH EXPOSURE ASSESSMENT (EA)

NOISE: There are no sources of hazardous noise in these spaces.

CHEMICALS: The only chemical products encountered are those associated with office products, including the toner cartridges used with printers and copy machines. Exposure to chemical ingredients in the toner, as well as those in other office products, will not result in significant exposures if used in the normal and intended manner and manufacturer instructions for their proper use are followed.

RADIATION: There are no sources of ionizing or non-ionizing radiation in these spaces.

PERSONAL PROTECTIVE EQUIPMENT (PPE): None worn or necessary.

ENGINEERING CONTROLS: None present or required.

RESPIRATORY PROTECTION PROGRAM: Operations performed do not require use of respirators, and they are not worn on an elective basis.

ERGONOMICS: Per OPNAVINST 5100.23G, Chapter 8, paragraph 0802c(3) there are no ergonomic stressors that would present significant risk and per Chapter 23, Appendix 23-B, workers reporting pain or discomfort from computer use have not been referred to the Industrial Hygienist.

POTENTIAL HAZARD	NUMBER OF MEASUREMENTS	METHOD OF MEASUREMENT 1	METHOD OF MEASUREMENT 2	FREQUENCY (per year)	MAN-HOURS (per year)
None					

Use the following codes: not applicable at this time.

Signature: **Signed/**
S. Eric Thurston, Industrial Hygienist

Date: 20 June 2012

APPENDIX B
AIR SAMPLING RESULTS

None collected or necessary.

APPENDIX C
MEASURED EQUIPMENT NOISE LEVELS

There are no hazardous noise sources located in these areas.

APPENDIX D
LOCAL EXHAUST VENTILATION
SYSTEM EVALUATION

There are no local exhaust ventilation systems located in these areas.

APPENDIX E
RESPIRATORY PROTECTION PROGRAM MATRIX

Respirators are not required and are not worn on an elective basis during departmental operations.

APPENDIX F
MEDICAL SURVEILLANCE MATRIX

Enrollment in medical surveillance programs is unnecessary.

**APPENDIX G
TRAINING MATRIX**

COMMAND: Naval Postgraduate School, Monterey DATE: June 2012
DEPARTMENT: Miscellaneous Spanagel Hall Departments

PROCESS	ESAMS TRAINING MODULE
Offices	Office Ergonomics (3030) (annual)

Additional training for safety-related hazards or based on other requirements may be identified separately by the NPS Safety and Occupational Health Office, or as automatically prescribed by the Enterprise Safety and Application Management System (ESAMS) when the user logs onto his or her account.

**APPENDIX G
GLOSSARY**

TERM	MEANING
AL	Action Level - Normally half of PEL. Exposure level at which air sampling, employee training, and medical surveillance are required.
ACGIH	American Conference of Government Industrial Hygienist
AC/HR	Air Changes Per Hour
ANSI	American National Standards Institute
AQS	Air Quality Standard
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers
ASTC	Aviation Survival Training Center
C	Ceiling - Toxic material exposure level which cannot be exceeded for any length of time.
CFM	Cubic Feet Per Minute
CFR	Code of Federal Regulation
EL	Excursion Limit - Concentration limit which cannot be exceeded at any time.
EAMP	Exposure Assessment/Monitoring Program. A program to evaluate workplace health hazards through surveys and exposure measurement.
EPA	Environmental Protection Agency
ERT	Emergency Reclamation Team
FC	Footcandles
F/CC	Fibers Per Cubic Centimeter. A means for expressing airborne asbestos fiber concentrations.
FeA	Field Area
FiA	Filter Area
FPM	Feet Per Minute
FT3	Cubic Feet
HDI	Hexamethylene Diisocyanate
HEPA	High Efficiency Particulate Air
HM	Hazardous Material
HMC&M	Hazardous Material Control and Management
HW	Hazardous Waste
IES	Illumination Engineering Society
IH	Industrial Hygiene
L	Liter
LPM	Liters Per Minute
LOD	Limit of Detection
LOQ	Limit of Quantitation

APPENDIX G
GLOSSARY
(continued)

TERM	MEANING
MG/M3	Milligram Per Cubic Meter of air. A means of expressing concentrations of dust and metal fumes in the air.
MSAL	Medical Surveillance Action Level. Concentration of air contaminant at which medical surveillance examinations must be provided to exposed personnel.
MSDS	Material Safety Data Sheet. A form used by manufacturers to communicate to users the chemical and physical properties of their products.
MSM	Medical Surveillance Matrix
NAVOSH	Navy Occupational Safety and Health
NEHC	Navy Environmental Health Center
NIOSH	National Institute of Occupational Safety and Health
OEL	Occupational Exposure Limit
OH/PM	Occupational Health/Preventive Medicine
OSHA	Occupational Safety and Health Administration
OV	Organic Vapor
PPE	Personal Protective Equipment
PPM	Parts Per Million. A means of expressing the concentration of gases and vapors in the air.
PSI	Pounds Per Square Inch
RF	Radio Frequency
SOP	Standard Operating Procedure
SQFT	Square Feet
STEL	Short Term Exposure Limit. A 15 minute time weighted average exposure which should not be exceeded at anytime during a workday.
STRESSOR	Potential hazard (e.g. Noise, Chemicals, Dusts, etc.)
TLV	Threshold Limit Value. Established by ACGIH as levels of airborne contaminants or physical hazards under which it is believed workers may be exposed on a daily basis without adverse effect.
TWA	Time Weighted Average. A method of averaging varying concentrations over a specified period of time, usually 8 hours.
UG	Microgram
VOL	Volume
>	Greater Than
<	Less Than

**APPENDIX H
CHANGE OF OPERATION NOTIFICATION**

Please use this form to notify the Industrial Hygienist of any changes to operations. This form needs to be completed and e-mailed to S. Eric Thurston, Industrial Hygienist, at sethurst@nps.edu. In such cases, contact the Industrial Hygienist for a version whose fields can be filled by the user.

POINT OF CONTACT:

TELEPHONE:

E-MAIL ADDRESS:

BLDG/ROOM #:

COMMAND/DEPARTMENT/SHOP: NPS Physics

INSTRUCTIONS:

The routine industrial hygiene survey process evaluates potential hazards to employees based on existing operations at the time of the survey. When operations change, the potential hazards can also change, and these new conditions need to be evaluated. Please notify the Industrial Hygienist if any of the following occur:

- a. New operations with suspected health hazards are performed
- b. New chemical products are used (please attach a brief list and only the page(s) of associated MSDS's listing the product's manufacturer, product name, and the chemical ingredients)
- c. An increase in major chemical usage
- d. New equipment with potential noise hazards is used
- e. Other new equipment posing suspected or known health hazards, such as lasers, is used
- e. Exposure frequency and time changes of operations with potential or known health hazards
- f. A change in local exhaust ventilation systems

List any changes below.

Date forwarded: _____