ENVIRONMENTAL HEALTH & SAFETY			
CHEMICAL EXPOSURE MONITORING PLAN			
Appoved by:		*Effective Date:*	*January 28, 2008*
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INTRODUCTION

POLICY

The handling and use of highly hazardous chemicals, such as highly toxic chemicals, carcinogens, and reproductive toxins, may require that laboratory personnel be monitored for potential chemical exposures. Faculty, students and staff at Wake Forest University School of Medicine (WFUSM) working with chemicals that require occupational exposure monitoring shall be monitored and documented as required by OSHA.

PURPOSE

The purpose of this document is to provide uniform guidelines for assessing occupational chemical exposure to OSHA Subpart Z – Toxic and Hazardous Substances at WFUSM.

SCOPE

This Chemical Exposure Monitoring Program applies to all employees located at Wake Forest University School of Medicine facilities.

REGULATORY OVERVIEW

OSHA Title
Air Contaminants
13 Carcinogens

OSHA Title
Alpha-Naphthylamine
Methyl chloromethyl ether
3,3'-Dichlorobenzidine (and its salts)
bis-Chloromethyl ether
beta-Naphthylamine.
Benzidine.
4-Aminodiphenyl
Ethyleneimine
beta-Propiolactone
2-Acetylaminofluorene
4-Dimethylaminoazobenzene
N-Nitrosodimethylamine
Vinyl chloride
Inorganic Arsenic
Lead
Chromium VI
Cadmium
Benzene
1,2-dibromo-3-chloropropane
Acrylonitirle
Ethylene Oxide
Formaldehyde
Methylenedianiline
1,3-Butadiene
Methylene Chloride
Occupational exposure to hazardous chemicals in laboratories

ROLES AND RESPONSIBILITIES

ENVIRONMENTAL HEALTH & SAFETY (EH&S)

- Prepare and maintain this program.
- Maintain an active inventory of areas where chemicals are used or stored.
- Perform exposure monitoring.
- Recommend corrective actions to reduce employee exposures to chemicals.
- Maintain exposure monitoring records.
- Maintain training records.

WFBMC ENGINEERING DEPARTMENT

- Implement corrective actions (engineering controls) that EH&S recommends.
- Perform maintenance on engineering controls (fume hoods, local exhaust ventilation, etc.).

WFBMC EMPLOYEE HEALTH SERVICES

- Evaluate employees whose exposure exceeds OSHA's PEL per WFUSM Medical Surveillance Policy.

ALL EMPLOYEES

- Participate in the Exposure Assessment.
- Use required Engineering Controls, Administrative Controls and Personal Protective Equipment (PPE).
- Participate in required annual training (i.e. formaldehyde and glutaraldehyde).
- Register all complaints of chemical exposure through your supervisor, the web based Hazard Report Form or EH&S at 716-9375.
- Report to Employee Health any signs or symptoms of over exposure to a chemical.

ASSESSMENTS

EH&S will identify all personnel who will be working with OSHA required chemicals through PeopleSoft Hazard Assessments and laboratory audits using the *Hazardous Chemicals Exposure Assessment in* **APPENDIX A.** Based on the PeopleSoft Hazard Assessment and the *Hazardous Chemicals Exposure Assessment,* EH&S may conduct personal or area monitoring to assess potential chemical exposures.

EXPOSURE MONITORING

EH&S shall measure personnel or area exposure to any chemical regulated by the OSHA Standard which requires monitoring or if there is reason to believe that exposure levels for that substance may be equal to or above the Permissible Exposure Limit (PEL).

WFUSM will maintain records of all measurements taken to monitor exposure. This record will include:

- The date of measurement.
- The operation being monitored.
- The methods of sampling and analysis and evidence of their accuracy and precision.
- The number, durations, time, and results of samples taken.
- The types of protective devices worn.
- The names job classifications and exposure estimates of the faculty and staff whose exposures are represented by the actual monitoring results.

INITIAL MONITORING

EH&S will perform initial monitoring to determine the airborne concentrations of OSHA required chemicals to which employees may be exposed.

PERIODIC MONITORING

- If the monitoring reveals employee exposure at or above the action level but at or below the 8-hour Time Weighted Average (TWA), the employer shall repeat such monitoring for each such employee at least every 6 months.

- If the monitoring reveals employee exposure above the 8-hour TWA, the employer shall repeat such monitoring for each such employee at least every 3 months.

- The employer may alter the monitoring schedule from quarterly to semiannually for any employee for whom two consecutive measurements taken at least 7 days apart indicate that the employee's exposure has decreased to or below the 8-hour TWA.

- If the monitoring section reveals employee exposure above the 15 minute ceiling limit or Short Term Exposure Limit (STEL), the employer shall repeat such monitoring for each such employee at least every 3 months, and more often as necessary to evaluate exposure the employee's short-term exposures.

TERMINATION OF MONITORING

- If the initial monitoring reveals employee exposure to be below the action level, the employer may discontinue TWA monitoring for those employees whose exposures are represented by the initial monitoring.

- If the periodic monitoring reveals that employee’s exposure, as indicated by at least two consecutive measurements taken at least 7 days apart, is below the action level, the employer may discontinue TWA monitoring for those employees whose exposures are represented by such monitoring.

- If the initial monitoring reveals employee exposure to be at or below the excursion limit, the employer may discontinue excursion limit monitoring for those employees whose exposures are represented by the initial monitoring.

- If the periodic monitoring reveals that employee exposure, as indicated by at least two consecutive measurements taken at least 7 days apart, is at or below the excursion limit, the employer may discontinue excursion limit monitoring for those employees whose exposures are represented by such monitoring.

NOTIFICATION

Employees will be notified in writing by EH&S within 15 days of their exposure. Any employee whose exposure exceeds OSHA's PEL will be referred to Employee Health for the medical surveillance program.

MEDICAL SURVEILLANCE

Refer to Medical Surveillance Policy.

ENGINEERING CONTROLS, ADMININSTRATIVE CONTROLS AND PPE

WFUSM will institute engineering and administrative controls to reduce and maintain employee exposures to OSHA Subpart Z Toxic and Hazardous Substances below the PEL and/or the STEL.

Whenever WFUSM has established that feasible engineering and administrative controls cannot reduce employee exposure below the PEL, WFUSM will implement/supplement with appropriate PPE, i.e, respirators.

LABELING REQUIREMENTS

Regulated areas where the concentration of airborne OSHA required chemicals exceed either the PEL or the STEL will be posted at all entrances and access ways with signs bearing the appropriate information required by OSHA. Access to regulated areas will be limited to authorized persons.

TRAINING REQUIREMENTS

All employees exposed at or above the permissible exposure level must receive appropriate training annually. The training program shall inform each employee of the following information:

- Contents of the OSHA Standard applicable to the chemical(s).
- Description of the potential health hazards associated with exposure.
- Description of the signs and symptoms of exposure.
- Instructions to immediately report to WFBMC Employee Health, the development of any adverse signs or symptoms susceptible to chemical exposure.
- Explanation of the importance of engineering and administrative controls for employee protection.

- Purpose for, proper use of, and limitations of personal protective equipment.
- Instructions for the handling of spills and emergencies.

RECORD KEEPING

EH&S will retain the following:

- Exposure determinations
- Exposure monitoring

PROGRAM REVIEW

The Chemical Exposure Monitoring Plan shall be reviewed by Environmental Health & Safety annually.

APPENDIX A

See next page

Chemical Exposure Assessment Form

Instructions: Complete this form and return it to EH&S via interoffice mail or Fax to (336)716-0588, Attn: Christopher Kolbash. If you have any questions contact EH&S at (336)716-9375.

Date:	
Please indicate which chemicals from the list below are used in your laboratory:	
☐ Acrylamide ☐ Acrylonitrile ☐ Benzene ☐ Cadmium ☐ Chloroform ☐ Ethylene Oxide ☐Formaldehyde (product:_____)	☐ Gluteraldehyde (product:_____) ☐ Metals (type:_____) ☐ Methylene Chloride ☐ Waste Anesthetic Gases (type:_____) ☐ Xylene ☐ Nano Materials (type:_____) ☐ Other_____
PI:	Department:
Building:	Room(s):
Lab Contact:	Phone #:

Briefly describe the procedures that involve the chemicals you marked above:

Description of each task	Duration of task	Frequency of task	Amount of chemical used (if necessary):

Check Personal Protective Equipment worn during procedures:

☐ Gloves (type_nitrile__)
☐ Face Shield
☐ Apron/Gown/Lab Coat
☐ Respirator (type_____)
☐ Goggles/ Safety Glasses
☐ Other: _____

Check Engineering Controls used during procedures:

☐ Fume Hood
☐ Biosafety Cabinet
☐ Glove Box
☐ Other: _____

List other lab personnel for whom this monitoring is representative: