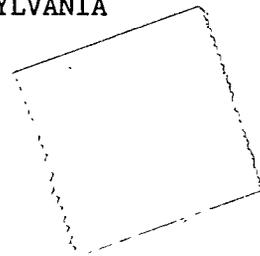


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CORPORATE SAFETY AND HEALTH PLAN
FOR
INSTALLATION RESTORATION PROGRAM STUDIES
AT NAS WILLOW GROVE, PENNSYLVANIA



Prepared For

Department of the Navy
Northern Division
Naval Facilities Engineering Command
Philadelphia, Pennsylvania 19142-5094

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1. INTRODUCTION

The health and safety of EA site workers and the public is a primary concern and goal during the Installation Restoration Program Studies at NAS Willow Grove, Pennsylvania. Thus, a comprehensive, carefully managed, and thoroughly documented health and safety plan is crucial for the successful completion of this project.

The following plan describes EA's corporate policy relative to employee training, medical and environmental surveillance, protective and emergency equipment, recordkeeping, and safe operating procedures that will be followed at the study site. Responsibility for the development, implementation, and control of hazardous waste operations is also delineated. Applicable portions of this generalized plan will be incorporated in the site-specific Site Safety and Health Plan developed after a careful review and evaluation of previous investigative reports and a site reconnaissance by Linda J. Rubin, CIH, the Corporate Safety and Health Officer, a Certified Industrial Hygienist.

All potential hazards specific to the study site will be addressed in the plan including:

Inhalation of toxic airborne contaminants during all field operations.

Direct contact with contaminated soil and water.

Presence of flammable/combustible vapors emitted from well holes and/or site excavation.

Heat stress due to protective clothing and environmental conditions.

Physical hazards inherent to field operations.

2. RESPONSIBILITIES

2.1 THE CORPORATE SAFETY AND HEALTH OFFICER (CSHO) WILL:

- . Develop the Site Safety and Health Plan.
- . Coordinate the medical and exposure monitoring of field personnel.
- . Provide health and safety training.
- . Conduct Pre- and Post-Investigation Health and Safety Briefings with field personnel.
- . Periodically monitor field investigations to evaluate the effectiveness of the Site Safety and Health Plan.
- . Revise the Site Safety and Health Plan whenever changes in site conditions or operations warrant such revision.

2.2 THE PROJECT MANAGER WILL:

- . In advance of field investigations, provide a list of field personnel to the CSHO.
- . Schedule Pre- and Post-Investigation Health and Safety Briefings for field personnel with the CSHO.
- . Designate a Site Safety and Health Coordinator for each investigation.
- . Periodically monitor the worksite to ensure conformance with the Site Safety and Health Plan.

2.3 THE SITE SAFETY AND HEALTH COORDINATOR (SSHC) WILL:

- . Conduct a Morning Safety Meeting each day with all site personnel for the purpose of reviewing the safety and health precautions to be observed during investigations.
- . Monitor field investigations to ensure conformance with the Site Safety and Health Plan.
- . Report any violations of the Site Safety and Health Plan and any health or safety concerns to the Project Manager or the CSHO.
- . Maintain the Daily Log.

2.4 FIELD PERSONNEL WILL:

- . Comply with all the requirements of the Site Safety and Health Plan.
- . Report any health or safety concern to the SSHC.

3. HAZARD COMMUNICATION AND TRAINING

3.1 COMPREHENSIVE HEALTH AND SAFETY INDOCTRINATION

A comprehensive health and safety indoctrination will be presented to all field personnel. An outline of the training is presented in Appendix A.

3.2 ANNUAL REFRESHER TRAINING

An annual 8-hour refresher training course is provided to all employees involved in field sampling and exploration activities at hazardous waste sites.

3.3 SPECIALIZED TRAINING

All site workers will be trained in the use of fire extinguishers and cardiopulmonary resuscitation. Additional training will be given to all employees prior to participating in field investigations requiring EPA Level A or B protection, or whenever the need for additional training is anticipated or identified, e.g., confined space entry.

3.4 PRE-INVESTIGATION HEALTH AND SAFETY BRIEFING

A pre-investigation briefing will be held with all assigned field personnel prior to commencing a field investigation to ensure all team members:

- . Received the required medical examination.
- . Have been issued the appropriate protective equipment and instrumentation.
- . Have thoroughly reviewed and understand the requirements in the Site Safety and Health Plan.

3.5 MORNING SAFETY MEETINGS

The SSHC will conduct Morning Safety Meetings each day at the worksite to review the applicable sections of the Site Safety and Health Plan, including expected hazards, special conditions, sampling procedures, location of emergency equipment and information, procedures for leaving a contaminated area, and the level of protection required to be worn. A record of the meetings will be maintained in the Daily Log of the Site Safety and Health Coordinator.

3.6 POST-INVESTIGATION HEALTH AND SAFETY BRIEFING

A post-investigation briefing will be held with all assigned field personnel following the end of the field investigations. The purpose of this meeting is to evaluate the effectiveness of the Site Safety and Health Plan and to discuss any health and safety problems that occurred during the investigations. The results of any environmental monitoring will be reported at this time.

4. MEDICAL SURVEILLANCE AND EXPOSURE MONITORING

4.1 MEDICAL SURVEILLANCE

All personnel, including subcontractor employees, must have satisfactorily passed a comprehensive physical examination within 12 months prior to participating in the field studies. The purpose of the examination is to establish the baseline status of the employee's health, to determine the suitability of the employee for the job, and to determine his/her ability to wear personal protective equipment, especially respirators. The examination is repeated annually. A summary of examinations, tests, or procedures, and organ systems evaluated is presented in Appendix B.

EA's medical surveillance program is directed by Julio C. Rivera, M.D., Chief, Occupational Medicine Division, Wyman Park Medical Center (a Johns Hopkins Health System Hospital) and Associate Director, Center for Occupational and Environmental Health, Baltimore, Maryland. Dr. Rivera is Certified in Occupational Medicine by the American Board of Preventive Medicine. He served in the Navy Medical Corps for 20 years.

In order to establish a permanent record of each employee's potential exposure to hazardous materials and contaminants during field investigations, employees are required to maintain a log of field sampling and exploration activities at known or suspected hazardous waste sites. A copy of the form used is presented in Appendix C.

The CSHO reviews the log, along with data provided by the project managers--e.g., historical or current operation/process information, EA's analytical results of ground-water and soil samples--to ensure the appropriateness of medical monitoring for a particular exposure. A copy of the employee work/exposure history form, with recommendations for specific tests, is sent to the examining physician and becomes a permanent part of the employee's medical record.

The comments section is used to describe any unusual opportunities for exposure to hazardous materials that occurred during field operations--e.g., chemical spill, measurements on any direct-reading air monitoring instrument, failure of protective equipment.

4.2 EMERGENCY MEDICAL PLAN

Emergency first aid treatment will be provided onsite by EA personnel trained in first aid procedures. The Navy Point of Contact will provide information on emergency medical assistance available on the activity. The specifics of the emergency medical plan will be defined in the Site Safety and Health Plan. Provisions for decontamination of personnel during medical emergencies will be included in the plan.

4.3 MEDICAL REPORTS AND RECORDS

Employees are notified, in writing, of the results of their physical examination and medical tests. EA's employee medical records are currently maintained at the Center for Occupational and Environmental Health. EA will ensure that these records are maintained for a period of at least 30 years. EA employees may request access to these records through the Center for Occupational and Environmental Health or EA's Corporate Safety and Health Officer.

4.4 ENVIRONMENTAL MONITORING

Personal air sampling is conducted periodically where necessary to evaluate the adequacy of the respiratory protective equipment and to determine the need for additional medical monitoring.

5. HEALTH AND SAFETY EQUIPMENT

5.1 PERSONAL PROTECTIVE EQUIPMENT

Disposable protective clothing will be used whenever appropriate to minimize the risk of cross-contamination. Selection of the appropriate personal protective equipment for field investigations is based on the definition of "levels of protection" found in EPA Draft Standard Operating Safety Guides (September 1984). The required protective equipment for each level and the selection criteria used are summarized in Appendix C. The initial selection and any deviation from the prescribed list of equipment must be approved by the Corporate Safety and Health Officer. EA will provide all protective clothing and equipment for DEC personnel and/or their consultants or agents. It will be the responsibility of DEC to ensure that their employees and/or consultants or agents have been provided respirator fit-tests and have been evaluated by a physician who has determined that they are physically able to wear a respirator.

5.2 ENVIRONMENTAL MONITORING EQUIPMENT

Field personnel will be issued appropriate air monitoring equipment as necessary which may include any or all of the following:

- . HNU or Photovac Photoionization Detector
- . Foxboro Flame Ionization Detector
- . Draeger Manual Sampling Pump and Detector Tubes
- . National Mine Service Combustible Gas Indicator/Oxygen Analyzer

The equipment will be pre-calibrated and operated only by personnel trained in its use.

5.3 EMERGENCY EQUIPMENT

5.3.1 Fire Extinguishers

Due to the potential for fire at many study sites, fire extinguishers will be readily available throughout the investigation. All fire extinguishers will be 20-lb Class ABC (carbon dioxide). One fire extinguisher will be kept with the field crew during any subsurface activity such as drilling or backhoe excavation, one will remain in the decontamination area, and one will be placed in every vehicle onsite.

5.3.2 First Aid Kits

First aid kits will be kept in clean areas at the site and with field crews.

5.3.3 Eye Wash

An eye wash station will be maintained at the decontamination zone. Eye wash solution bottles will be kept with field crews.

5.3.4 Emergency Shower

If required by site contaminants or conditions, an emergency shower, or a sufficient supply of potable water for flushing personnel, will be available at critical site locations.

5.3.5 Communications

A telephone will be installed whenever long-term investigations require the use of a field office trailer. Two-way radios will be provided for field communications as necessary.

6. STANDARD OPERATING PROCEDURES

6.1 SITE SAFETY AND HEALTH PLAN

Prior to the final development of the site-specific Site Safety and Health Plan, the Project Manager and the Corporate Safety and Health Officer will perform a site reconnaissance to verify that current conditions onsite are as described in previous investigations. Included in this effort will be familiarization with the location of commercial operations and residences, sampling and well sites, work zones, etc.

The Site Safety and Health Plan will provide procedures for the control of all anticipated hazards and for emergencies. It will be revised as appropriate to reflect changes in site conditions and operations.

6.1.1 Responsibilities

Key personnel and alternates responsible for site health and safety will be identified. This includes the Project Manager and the Site Safety and Health Coordinator.

6.1.2 Site Description

The investigation site will be described, including:

- . Facility description
- . Water supply
- . Telephone, radio, power and gas lines
- . Unstable terrain

Important features will be marked on the site map.

6.1.3 Hazard Evaluation

All known chemical and physical hazards will be evaluated and the risk associated with the site and each activity will be described. OSHA Permissible Exposure Limits (PELs) and/or ACGIH Threshold Limit Values (TLVs) of substances suspected of being disposed of at the site will be cited. An assessment of community risk to exposure as a result of site operations will be made.

6.1.4 Work Zones

Normally, the hazardous waste site will be divided into three specific zones:

- . Zone 1 - Exclusion Zone
- . Zone 2 - Contamination Reduction Zone
- . Zone 3 - Support Zone

These zones will be established on the basis of contamination potential ranging from the highest levels of contamination in the exclusion zone to little or no contamination potential in the support zone. All zones will be defined and marked on the site map. Barricades and placards will be used at the site to control access to all three zones, where feasible.

The exclusion zone will be the area of greatest environmental contamination and presents the highest risk for worker exposure. Personnel entering this area will be required to wear the previously mandated level of protection. In some instances, more than one level of protection will be required within the same zone, depending on the tasks to be performed.

The contamination reduction zone will act as a transition between the contaminated and clean areas. Decontamination of equipment and clothing will occur in this zone.

The support zone will be considered the noncontaminated or clean area. Support equipment will be located in this zone.

6.1.5 Levels of Protection

The appropriate level(s) of protection for each activity will be determined by the CSHO and delineated in the Site Safety and Health Plan. The EPA Levels of Protection prescribed in the Draft Standard Operating Safety Guides (September 1984) and described in Appendix C will be modified by the CSHO as indicated by the specific site hazards and the degree of protection needed. At least one level of protection higher than anticipated will be provided for in the Health and Safety Site Plan and the decision logic to change the level of protection will be clearly delineated. Equipment needed for all levels in the Plan will be available at the site.

6.1.6 Environmental Monitoring

Environmental monitoring will be conducted with direct reading air monitoring instruments operated by trained field personnel, where appropriate and feasible. These readings will serve to alert personnel to conditions that require increasing the level of protection at the site.

Personnel exposure monitoring will be conducted periodically during the investigations by staff industrial hygienists.

6.1.7 Safe Work Practices

The following safe work practices will be explicitly stated in the Site Safety and Health Plan:

- . No personnel will be permitted onsite unless they have proof of having passed the required medical examination.

- . Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in any area designated as contaminated.
- . Hands and face must be thoroughly washed upon leaving the work area.
- . Prescription drugs must not be taken by personnel where the potential for contact with toxic substances exists, unless specifically approved by a qualified physician. Alcoholic beverage intake is prohibited during the work day.
- . Confined and/or enclosed spaces (e.g., inspection holes, storm sewers, manholes, tanks) will not be entered without approval and instruction from the Corporate Safety and Health Officer.
- . Facial hair that interferes with the face-to-facepiece fit of a respirator will be not be permitted if respirators are required to be worn at the site.
- . Contact lenses will not be permitted to be worn with full facepiece respirators.
- . Where appropriate, wind indicators will be strategically located onsite.
- . Contact with contaminated or potentially contaminated surfaces should be avoided. Whenever possible, employees must not walk through puddles, mud, or any discolored ground surface; or kneel on the ground, lean, sit, or place equipment on drums, containers, vehicles, or on the ground.
- . No street clothes will be worn on the site.
- . Personnel onsite will use the buddy system when wearing respiratory equipment.
- . Visual contact must be maintained between team members onsite.

6.1.8 Site Entry Procedures

Prior to entry to the contaminated zone, a Morning Safety Meeting will be held by the SSHC with all site personnel. After the Site Manager describes the nature of the work to be accomplished that day, the SSHC will review the applicable sections of the Site Safety and Health Plan, including expected hazards, special conditions, sampling procedures, location of emergency equipment and information, procedures for leaving

a contaminated area, and the level of protection required to be worn. All safety equipment will be inventoried and inspected. Routine and emergency communications will be prearranged and reviewed, including radios, hand signals, signs, and other means.

Personal protective equipment will be donned in the prescribed order. Team members will check each other to ensure there are no rips in the clothing or malfunctioning equipment.

6.1.9 Decontamination Procedures

Decontamination requirements will vary with the level of protection required. For most investigations, the following procedure will be adequate.

All personnel will complete appropriate decontamination procedures prior to leaving the site. Receptacles will be provided for all disposable clothing. The receptacles will be conventional trash cans lined with heavy duty polyethylene trash bags. Wash tubs containing a detergent-water solution or another appropriate decon solution and soft bristle brush will be used to decontaminate reusable personal protective clothing and boots. Wash tubs containing clean, potable water will be used for the final rinsing. The wash waters and the discharged disposable items will be collected, if appropriate for site conditions.

Procedures will be established for cleaning and maintaining contaminated respirators at the site.

Air monitoring equipment will be brushed to remove any obvious contamination and then taken to a clean zone for recharging and calibration.

All heavy equipment will be decontaminated prior to leaving the site. This will involve manual removal of gross contamination with shovels or other tools, followed by a steam or high pressure wash, paying particular attention to tracks, wheels, and under carriages.

The most commonly used decon solution will be detergent-based. This is especially suitable for organic contaminants. Other options include:

- . Liquinox-based for light contaminants
- . Trisodium phosphate-based for most acids and alkalines
- . Calcium hypochlorite-based for organophosphates and cyanides

6.1.10 Emergency Information

Emergency telephone numbers will be listed, including ambulance, police, fire department, hospital, and field and corporate office contacts. The Project Manager's and CSHO's home telephone number will be included.

The emergency route to the hospital, with travel time, will be mapped. If appropriate, the hospital emergency room will be contacted and briefed regarding the scope of the study.

The EA Project Manager and at least one other staff member will be certified to perform CPR and first aid onsite. First-aid kits will be located at the decontamination area; one first-aid kit will be carried by each crew. An eye wash station will be available and will be marked with prominent signs. In addition, an eye wash kit will be carried with each field crew.

Fire extinguishers will be kept at each drilling rig or backhoe, at the decontamination area, and in the office. If appropriate, local fire departments will be notified prior to beginning any field investigations.

Site evacuation procedures will be described, if necessary, including withdrawal from immediate work area to a safe upwind location, withdrawal from the site, and withdrawal from the area.

6.1.11 Site Security

Where necessary, site security procedures, e.g., fences, signs, security patrols, and check-in procedures will be established. No open holes in the fill will be left unattended overnight.

6.2 RECORDKEEPING

The Site Safety and Health Plan will define the extent of safety and health-related recordkeeping requirements during field operations. However, they will include documentation of:

- . Content of Morning Safety Meetings
- . Environmental monitoring data
- . Any unusual conditions or occurrences while on site
- . Accidents and injuries
- . Contingency plan communications and contacts.

Training records, proof of medical examination of site personnel, records of site monitoring visits by the Corporate Safety and Health Officer and Project Manager relative to safety and health, and all communication between the CSHO and Site Safety and Health Coordinator will be maintained in the Corporate office. Copies of these records will be provided to the EIC upon completion of the project.

APPENDIX A

SAFETY AND HEALTH PROCEDURES
AT HAZARDOUS WASTE SITES

APPENDIX A

SAFETY AND HEALTH PROCEDURES AT HAZARDOUS WASTE SITES TRAINING PROGRAM

I. Introduction

- A. Purpose of training/EA policy
- B. Definition of hazardous material
- C. Routes of exposure
- D. "Safe" level of exposure
 - 1. Dose-response curve
 - 2. Standards (e.g. OSHA, ACGIH)
- E. Indicators of acute toxic exposure effects

II. Environmental Monitoring

- A. Area vs. personal monitoring
- B. Instrumentation
 - 1. Direct reading
 - a. Photoionizer (HNU and Photovac)
 - b. Organic vapor analyzer
 - c. Manual sampling pump and detector tubes
 - d. Combustible gas indicator/oxygen analyzer
 - 2. Other monitoring instrumentation and techniques
 - a. Personal sampling pump
 - b. Gas/vapor badge

III. Personal Protective Equipment

- A. Respirators
 - 1. Selection
 - 2. Use
 - 3. Maintenance
 - 4. Proper fitting
 - 5. Limitations
- B. Clothing selection
 - 1. Coveralls/suits
 - 2. Gloves
 - 3. Boots
- C. Other safety equipment (e.g. glasses, helmets)

IV. Medical Program

- A. Physical examination and follow-up
- B. Medical records
- C. Emergency medical care and treatment

V. EPA Levels of Protection

- A. Criteria for selection of levels, with examples.
- B. Selection of appropriate personal protective equipment for level
- C. Other considerations (e.g. heat and physical stress, air surveillance, chemicals toxic to skin, atmospheric conditions)
- D. Direct reading instrument criteria levels

VI. Work Zones

- A. Exclusion, contamination reduction and support zones
- B. Monitoring and sampling

VII. Decontamination Procedures

- A. Sources of contamination
- B. Contamination reduction corridor
- C. Extent of decontamination required
- D. Decontamination of personnel, including during medical emergencies
- E. Decontamination of equipment

VIII. Site Safety Plan

- A. Essential components
 - 1. Site characteristics
 - 2. Hazard evaluation
 - 3. Key personnel
 - 4. Levels of protection
 - 5. Work zones
 - 6. Control of site access
 - 7. Decontamination procedures
 - 8. Entry and escape routes
 - 9. Emergency telephone numbers and facilities
 - 10. Personnel air monitoring
 - 11. Training requirements
 - 12. Weather-related problems
 - 13. Morning meetings
- B. General safe work practices

IX. Sample Handling

- A. DOT requirements for shipping samples

X. EA Safety and Health Program and Policy

- A. Safety and Health Program Manual
- B. Pre- and post-investigation briefings
- C. Employee conformance with safety and health rules,
regulations and procedures

APPENDIX B

SUMMARY OF EXAMINATIONS,
TESTS OR PROCEDURES
AND ORGAN SYSTEMS EVALUATED

APPENDIX B

SUMMARY OF EXAMINATIONS, TESTS OR PROCEDURES, AND ORGAN SYSTEMS EVALUATED

<u>Examination/Test/Procedure</u>	<u>Purpose, and Organ System Evaluated</u>
Occupational and medical history	Review of previous and current work history. Review of past health (including previous illnesses, hospitalization, hereditary disorders) and other significant symptoms, past or current. A copy of the initial and interim occupational and medical history form is attached.
Physical examination	Height, weight, temperature, pulse rate, blood pressure, and abnormalities in other organ systems.
Vision test	A vision test is performed to determine near and far vision, muscular balance of both eyes, depth and color perception, and peripheral vision.
Audiogram	A hearing test is performed in a soundproof room so that accurate hearing threshold levels can be measured. The hearing test is rated to determine the presence of hearing loss at both speech and high frequencies.
Spirometry	Lung function is monitored through a pulmonary function examination. Spirometry measures the total lung volume in liters and how quickly air can be expelled in the first second.
Chest x-ray	a 16" x 17" chest x-ray is important in determining the presence of lung disorders such as tuberculosis, emphysema, and lung cancer. It can also provide valuable information about the heart, and the bones of the chest.
Electrocardiogram (and stress test)	Reveals signs of heart disease such as coronary arteriosclerosis and heart irregularities.

SUMMARY OF EXAMINATIONS, TESTS OR PROCEDURES, AND ORGAN SYSTEMS EVALUATED
(Continued)

<u>Examination/Test/Procedure</u>	<u>Purpose, and Organ System Evaluated</u>
Urinalysis	Screening for presence of disease of kidney and urinary tract, and for diabetes mellitus. Includes a chemical analysis for albumin, glucose, bilirubin, acetone, and occult blood, measurements of pH and specific gravity, and a microscopic review to determine presence of red and white blood cells.
Complete blood count	Includes red and white blood count and hemoglobin (Hematocrit, blood cell indices). Used to screen for blood disorders such as anemia and leukemia.
Blood chemistries (SMA 12/6)	18 different tests from a single sample help determine liver and kidney function, diabetes and heart disease.
Lipid profile	Measures triglyceride and cholesterol level and types. Useful to evaluate risk for arteriosclerosis.
Red blood cell cholinesterase	Screening test for overexposure to organophosphate insecticides.
Heavy metal screen (blood or urine)	Screening test for overexposure to arsenic, lead, and mercury.
RPR	Screening serology test for syphilis.
Blood type and Rh factor	Determines blood type and Rh factor. Useful in case of emergency transfusion.
Tetanus toxoid booster	Prophylaxis for tetanus infection.
Respirator medical certification (ANSI Z88, 6-1984 guidelines)	Determines ability to wear a respirator.

WYMAN PARK HEALTH SYSTEM
AND
THE CENTER FOR OCCUPATIONAL AND ENVIRONMENTAL HEALTH
THE JOHNS HOPKINS UNIVERSITY

INITIAL
OCCUPATIONAL AND MEDICAL HISTORY

Confidential

Name		Date of Visit	
Hospital Number		Social Security Number	
Agency/Industry		Department/Division	
Job Title			
Date of Birth		Age	Date Employed
Home Address			
Phone Number		Daytime Phone Number	
Personal Physician Address			
Phone Number			

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Wyman Park Health System
January 30, 1985

Name _____

OCCUPATIONAL HEALTH HISTORY

1. Current Employer _____ Dates Employed _____
Type of Industry _____ Job Title _____
Job Duties _____

Known health hazards _____

Protective equipment used _____

Have you experienced any problems with comfort or fit of protective clothing or equipment?

Yes No Not applicable

If yes, please explain _____

2. List your previous jobs, beginning with the one you had immediately prior to your present job. Include military service and volunteer work.

- a. Employer _____ Dates employed _____
Type of Industry _____ Job Title _____
Job Duties _____

Known health hazards _____

Protective equipment used _____

- b. Employer _____ Dates employed _____
Type of Industry _____ Job Title _____
Job Duties _____

Known health hazards _____

Protective equipment used _____

Name _____

c. Employer _____ Dates employed _____

Type of Industry _____ Job Title _____

Job Duties _____

Known health hazards _____

Protective equipment used _____

d. Employer _____ Dates employed _____

Type of Industry _____ Job Title _____

Job Duties _____

Known health hazards _____

Protective equipment used _____

e. Employer _____ Dates employed _____

Type of Industry _____ Job Title _____

Job Duties _____

Known health hazards _____

Protective equipment used _____

f. Employer _____ Dates employed _____

Type of Industry _____ Job Title _____

Job Duties _____

Known health hazards _____

Protective equipment used _____

(Continue on back of page if necessary)

Name _____

3. Indicate any job related illness or injury you have experienced in your present job or in a previous job. _____

4. Do you do part-time work outside of your present occupation such as painting, carpentry, auto repair, farming?
 Yes No
If yes, list _____

5. Have you ever worked with any substance which caused you to break out in a rash?
 Yes No
If yes, please describe your reaction and name of substance: _____

6. Have you ever worked with any substance which caused you to have tightness in your chest, cough, shortness of breath or wheezing?
 Yes No
If yes, please describe _____

7. Have you ever worked at any job which caused you to have pain in your back, legs, shoulder, arms, or hands?
 Yes No
If yes, please describe _____

8. Have you regularly been exposed to loud noises, excessive vibration, heat or cold?
 Yes No
If yes, please describe _____

9. Have you ever had a job or hobby which required repetitive wrist motion such as use of hand tools, crocheting, playing a musical instrument?
 Yes No
If yes, please list _____

10. Does your job require shift work?
 Yes No
If yes, approximately how often do you change shifts _____

Name _____

11. Have you ever changed jobs or work assignments because of a health problem or injury?

Yes No

If yes, please describe _____

12. Do you smoke or eat in your work area?

Yes No

13. Do you have any health concern regarding specific exposures or activities at work?

Yes No

If yes, please explain _____

14. Is ventilation at your workplace adequate?

Yes No

If no, please explain _____

15. Are you aware of any industrial hygiene sampling at work?

Yes No

ENVIRONMENTAL HISTORY

1. Approximately how old is your place of residence? _____

2. How long have you lived there? _____

3. Indicate type of heating and insulation, if known _____

4. Do you live near an industrial plant or hazardous waste site?

Yes No

If yes, please describe _____

5. Does your spouse or other household member have contact with dusts or chemicals at work or during leisure?

Yes No

If yes, please describe _____

6. Do you have any hobbies, such as gardening, wood-working, ceramics, which may expose you to hazardous chemicals?

Yes No

If yes, please list _____

APPENDIX C

EMPLOYEE WORK/EXPOSURE HISTORY

NAME _____

MEDICAL HISTORY

I. GENERAL HEALTH HISTORY

a. How is your health? Excellent Good Fair Poor

b. Do you have a health problem now?

Yes No

If yes, describe: _____

c. Do you have or have you ever had any of the following? (Mark an x in yes or no column)

Yes No		Yes No		Yes No	
Acne		Epilepsy		Measles	
Alcoholism		Eye problems		Migraine headaches	
Allergies		Gall bladder disease		Mumps	
Arthritis		Head injury		Peptic ulcer	
Asthma		Hearing problems		Pneumonia	
Back injury		Heart attack		Psychiatric illness	
Bronchitis		Hemorrhoids		Polio	
Cancer/tumor		Hernia		Rheumatic fever	
Colitis		High blood pressure		Stroke	
Diabetes		Hypoglycemia		Thyroid disease	
Diverticulitis		Kidney trouble		Tuberculosis	
Emphysema		Liver disease		Varicose veins	

d. Have you been hospitalized for illnesses or operations?

Yes No

If yes, list with approximate date:

<u>Date</u>	<u>Illness/Operation</u>	<u>Hospital</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

e. Are you allergic to anything that you know of?

Yes No

f. Are you taking any medications, including non-prescription medication?

Yes No

If yes, please list:

NAME _____

(Family medical history - continued)

Have any of your blood relatives had any of the following illnesses? If yes, mark "x".

Father Mother Brother/
 Sister Children Grandparents

Congenital defect					
Diabetes					
Emphysema					
Heart trouble					
High blood pressure					
Kidney disease					
Lung disease					

III. PERSONAL MEDICAL HISTORY

Mark an x in yes or no column.

x = Yes

0 = No

Yes No

Yes No

EYES			NECK		
Wear glasses			Pain/stiffness		
Color blind			Lumps/swelling		
Cataracts			RESPIRATORY		
Blurred/double vision			Frequent cough		
Redness/irritation			Coughing up blood		
Spots in vision			Coughing up phlegm		
EARS			Shortness of breath		
Wear hearing aid			Wheezing		
Difficulty hearing			Tightness in chest		
Ringing in ears			CARDIOVASCULAR		
Frequent infections			Irregular heartbeat		
NOSE			Heart murmur		
Loss of smell			Chest pain at rest		
Excessive sneezing			Chest pain on exertion		
Frequent colds			DIGESTIVE		
Frequent nosebleeds			Loss of appetite		
Sinus trouble			Nausea/vomiting		
MOUTH			Heartburn/indigestion		
Sore or bleeding gums			Stomach pain		
Dentures			Change in bowel habits		
Sore tongue			Black or tarry stools		
Taste change			URINARY		
THROAT			Trouble urinating		
Trouble swallowing			Poor bladder control		
Frequent sore throat			Frequent urination		
Persistent hoarseness			Burning on urination		
Recent voice change			Blood in urine		

NAME _____

(Personal medical history - continued)

Mark an x in the yes or no column.

	Yes	No		Yes	No
REPRODUCTIVE			NERVOUS SYSTEM		
Difficulty conceiving (you or spouse)			Severe dizziness		
Number of live births			Frequent fainting spells		
Number of still births			Weakness in arms or legs		
MALE ORGANS			Numbness in arms or legs		
Prostate trouble			Trouble remembering		
Weak urine stream			Uncoordinated walking		
Penis discharge			Nervousness		
FEMALE ORGANS			Difficulty sleeping		
Menstrual disorders			BONES, JOINTS, MUSCLES		
Pre-menstrual tension			Pain in arms, legs, feet		
Bleeding between periods			Aching/swollen joints		
Pregnant now?			Aching muscles		
Last menstrual period (date) _____			Low back pain		
Last pap smear (date) _____			SKIN		
			Sensitive skin		
			Cracked or dry skin		

The foregoing information supplied by me is true and complete to the best of my knowledge and belief.

Signature of examinee

Date

Physician Comments: _____

Signature of reviewing physician

Date

WPHS
AND
COEH

INTERIM
OCCUPATIONAL AND MEDICAL HISTORY

Confidential

Name		Date of Visit
Hospital Number		Social Security Number
Agency/Industry		Department/Division
Job Title		
Date of Birth	Age	Date Employed
Home Address		
Phone Number		Daytime Phone Number
Personal Physician Address		
Phone Number		

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Wyman Park Health System
January 30, 1985

Name _____

INTERIM OCCUPATIONAL HISTORY

1. Has your job changed in any way since your last visit?

Yes No

If yes, please describe: _____

2. Since your last visit, have you been injured or ill as a result of your work?

Yes No

If yes, please explain: _____

3. Have you experienced any problems with comfort or fit of protective clothing or equipment?

Yes No

If yes, please explain: _____

4. Do you have any health concern regarding specific exposures or activities at work?

Yes No

If yes, please explain: _____

5. Since your last visit, have you begun or changed any hobbies or part-time employment?

Yes No

If yes, please explain: _____

6. Since your last visit, have you changed your place of residence?

Yes No

7. Does your spouse or other household member have contact with dusts or chemicals at work or during leisure?

Yes No

If yes, please describe: _____

Name _____

INTERIM MEDICAL HISTORY

1. Since your last visit, have you been hospitalized?

Yes No

If yes, please explain: _____

2. Have you had any injuries or illnesses?

Yes No

If yes, please explain: _____

3. Do you take medication on a regular basis (include non prescription drugs)?

Yes No

If yes, please list:

4. Date of last chest X-ray: _____

5. Check the smoking history closest to your own:

Never smoked regularly

Used to smoke regularly

How many years did you smoke? _____

How many packs of cigarettes per day? _____

pipes per day? _____

cigars per day? _____

How long ago did you stop? _____

Currently a smoker

How many years have you smoked? _____

How many packs of cigarettes per day? _____

pipes per day? _____

cigars per day? _____

6. On the average, how much of the following do you drink per week?

Beer _____ cans/bottles

Wine _____ glasses

Liquor _____ ounces

7. Have you gained or lost more than ten pounds in the last six months?

Yes No

Name _____

8. Since your last visit, have you had any of the following?

	Yes	No
Chest pain on exertion	<input type="checkbox"/>	<input type="checkbox"/>
Frequent shortness of breath	<input type="checkbox"/>	<input type="checkbox"/>
Persistent cough	<input type="checkbox"/>	<input type="checkbox"/>
Change in weight	<input type="checkbox"/>	<input type="checkbox"/>
Change in appetite	<input type="checkbox"/>	<input type="checkbox"/>
Change in bowel habits	<input type="checkbox"/>	<input type="checkbox"/>
Blood in stool	<input type="checkbox"/>	<input type="checkbox"/>
Frequent or difficult urination	<input type="checkbox"/>	<input type="checkbox"/>
Change in vision	<input type="checkbox"/>	<input type="checkbox"/>
ringing in ears	<input type="checkbox"/>	<input type="checkbox"/>
Change in hearing	<input type="checkbox"/>	<input type="checkbox"/>
Allergic skin reactions	<input type="checkbox"/>	<input type="checkbox"/>
Frequent or severe headaches	<input type="checkbox"/>	<input type="checkbox"/>
Excessive fatigue	<input type="checkbox"/>	<input type="checkbox"/>
Difficulty sleeping	<input type="checkbox"/>	<input type="checkbox"/>
Numbness or tingling in hands, arms or legs	<input type="checkbox"/>	<input type="checkbox"/>
Change in sex drive	<input type="checkbox"/>	<input type="checkbox"/>
Inability to have children	<input type="checkbox"/>	<input type="checkbox"/>
Miscarriages or stillbirths (self or spouse)	<input type="checkbox"/>	<input type="checkbox"/>

Name _____

The foregoing information supplied by me is true and complete to the best of my knowledge and belief.

Signature or examinee Date

Physician comments: _____

Signature of reviewing physician Date



EMPLOYEE WORK/EXPOSURE HISTORY

Name	Position	Dates (From/To)
------	----------	-----------------

Project Number	Location	Dates (From/To)	Total Hours On-Site	Work Performed	Additional Comments
1					
2					
3					
4					
5					
6					
7					

Submitted By	Date
Reviewed By	Date
Comments	

APPENDIX D
LEVELS OF PROTECTION

APPENDIX D

LEVELS OF PROTECTION

The following proposed levels of protection are based primarily on direct reading instrument measurements, as recommended by EPA. Adaptations of the protective clothing protocols will be made based on anticipated types and concentrations of toxic contaminants at the site.

LEVEL A

Level A is worn when the highest level of respiratory, skin and eye protection is required.

- Protective equipment required

- Pressure-demand (positive pressure) SCBA, NIOSH/MSHA-approved
- Fully encapsulating chemical resistant suit
- Gloves (inner) chemical-resistant, nitrile or solvex,
as appropriate
- Boots, chemical-resistant, steel toe and shank
- Hard hat

- Selection criteria

- Extremely hazardous substances are known or suspected, and skin contact is possible.

- The potential exists for contact with substances that destroy skin.

- Readings on the OVA or PID range from 500 to 1,000 ppm above background.

- Operations are conducted in confined, poorly ventilated areas or airborne hazards are unknown.

LEVEL B

Level B safety gear is worn when the highest level of respiratory protection is required, but a lesser degree of skin protection is required.

- Protective equipment

- Pressure-demand (positive pressure) SCBA, NIOSH/MSHA approved
- Chemical-splash suit or polycoated disposable chemical-resistant coveralls
- Gloves (inner) nitrile or solvex
- Gloves (outer) chemical resistant (taped to sleeve)
- Boots, chemical resistant, steel toe and shank
- Boot covers, disposable
- Hard hat

. Selection criteria

Atmospheres with chemical concentrations considered IDLH.

Atmospheres exceeding limits of protection afforded by a full-face air purifying respirator.

Atmospheres containing substances with poor warning properties, substances for which air purifying cartridges do not exist, or have low removal efficiency.

Atmospheres containing <19.5 percent oxygen.

Conditions are such that small exposed areas about the head and neck will not be contacted by hazardous substances.

Atmosphere contains from 5 to 500 ppm above background volatile organics as measured by the OVA or PID.

LEVEL C

Level C safety equipment will be worn when the types and concentrations of airborne contaminants are known, and the criteria for using the air purifying respirators are met.

. Protective Equipment

Full-face, air purifying respirator (fit-tested) with appropriate canister

Chemical-Splash suit or polycoated disposable coveralls

Gloves (inner) nitrile or solvex

Gloves (outer) chemical resistant (taped to sleeves)

Boots, chemical-resistant, steel toe and shank

Boot covers, disposable

Hard hat

. Selection Criteria

Atmospheric contaminant concentrations do not exceed IDLH levels.

Airborne concentrations of identified substances will be reduced by the respirator to below the substance(s) exposure limit.

Service life of the canister will not be exceeded.

Conditions are such that small exposed areas about the head and neck will not be contacted by hazardous substances.

Atmosphere contains between 19.5 and 25 percent oxygen.

Atmosphere contains less than 5 ppm above background volatile organics as measured by a PID or OVA.

LEVEL D

Level D protection is primarily a work uniform. It will be worn only in areas where there is no possibility of contact with contamination.

. Protective Equipment

Coveralls, poly/cotton or disposable

Gloves

Boots, steel toe and shank

Hard hat

Safety goggles or glasses, as needed

Face shield, as needed