

Health and Safety Plan
for
Naval Air Warfare Center
AREA B HYDROGEOLOGIC
INVESTIGATION
Warminster, Pennsylvania



Northern Division
Naval Facilities Engineering Command

Contract No. N62472-90-D-1298
Contract Task Order 0134

October 1993

**HEALTH AND SAFETY PLAN
NAVAL AIR WARFARE CENTER (NAWC)
AREA B HYDROGEOLOGIC INVESTIGATION
WARMINSTER, PENNSYLVANIA**

**COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT**

**Submitted to:
Northern Division
Environmental Branch, Code 18
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop No. 2
Lester, Pennsylvania 19113**

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for Neil Teamer
**JEFF ORIENT
PROJECT MANAGER
HALLIBURTON NUS CORPORATION**

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1.0 INTRODUCTION AND PERSONNEL ASSIGNMENTS

1.0 INTRODUCTION

This Health and Safety Plan (HASP) is an amended version of the CTO 0022 HASP developed in May 1992. It is intended to provide safety procedures for Halliburton NUS Corporation (HNUS) employees and HNUS subcontractor personnel engaged in hydrogeologic investigation activities at the Naval Air Warfare Center (NAWC) in Warminster, Pennsylvania. This plan was developed using available information regarding known/suspected chemical contaminants and physical hazards that may be encountered during planned activities. If additional information becomes available prior to or throughout the course of field activities, this document will be modified accordingly. Modifications will be reviewed and approved by the HNUS Health and Safety Manager (HSM), Matt Soltis, and will be immediately communicated to appropriate personnel. The HASP is intended to be in compliance with 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response: Final Rule."

1.2 SITE INFORMATION AND PERSONNEL ASSIGNMENTS

Site Name: NAWC Warminster
Address: Warminster, Pennsylvania

Client Contact: Lonnie Monaco
Phone Number: (215) 595-0565
Facility Environmental
Coordinator: Frank Kurdziel
Phone Number: (215) 441-7118

Effective Date: July 1993
Purpose of Site Visit: Hydrogeologic Investigation of Area B
Proposed Dates of Work: October 1993 through February 1994

Project Team:

HNUS Personnel:

Discipline/Tasks Assigned:

Jeff Orient
Donald Whalen
Paul Persing, Kevin Kilmartin

Project Manager
Field Operations Leader (FOL)/HSO (as necessary)
Site Health & Safety Officer (HSO)/Geologist

Non-HNUS

Personnel/Affiliation:

Plan Preparation:

Prepared by: Marcia Case, HNUS
Reviewed and approved by: Matthew M. Soltis, HNUS

Reviewed:

HNUS

Project Manager: Jeff Orient

Follow-Up Report:

Responsible Person: Donald Whalen
(Must fill out Follow-Up Report)

2.0 DESCRIPTION AND BACKGROUND

2.1 FACILITY DESCRIPTION

NAWC Warminster covers 734 acres in Warminster, Bucks County, Pennsylvania (see Figure 2.1, page 2-2). The main areas of concern at NAWC are eight waste areas covering more than two acres. These areas include three waste burn and disposal pits (site nos. 1, 3, and 6), two sludge disposal pit areas (site nos. 2 and 7), landfills located north and south of the runway (site nos. 4 and 5), and a fire-training area (site no. 8). The nearest population center involves residents living at the facility. The closest home is about 200 feet away from the base. For the purpose of this investigation, Area B includes Site 5 (South Runway Landfill), Site 6 (Waste Pit No. 3), and Site 7 (Sludge Disposal Site). All sites are within the fenced NAWC Warminster perimeter (Figure 2.2).

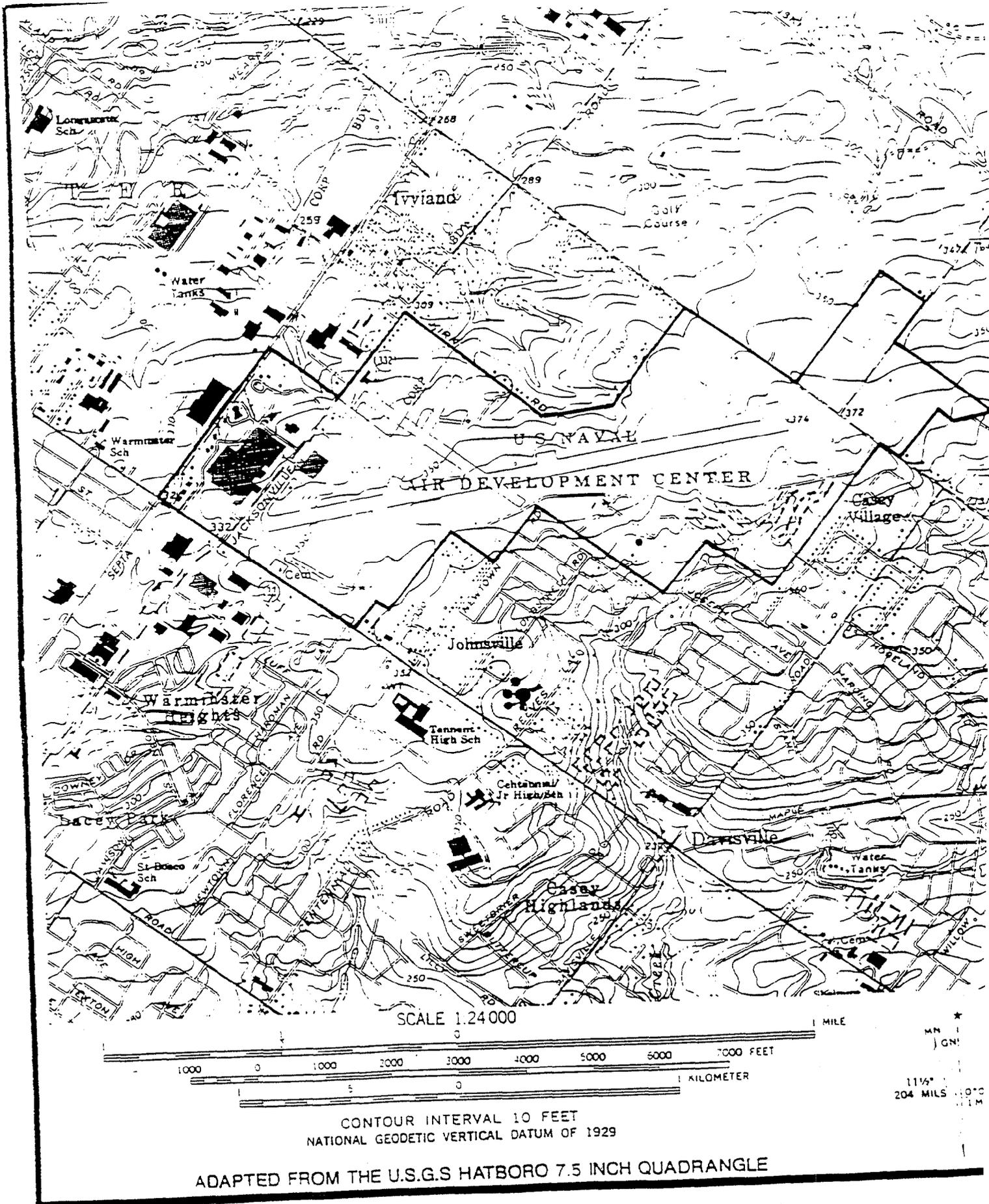
2.2 FACILITY HISTORY

Commissioned in 1944, NAWC's main mission is research, development, testing, and evaluation for naval aircraft systems. NAWC also conducts studies in anti-submarine warfare systems and software development. Historically, wastes were generated during aircraft maintenance and repair, pest control, firefighting training, machine and plating shop operations, spray painting, and various materials research and testing activities in laboratories. These wastes included paints, solvents, sludges from industrial wastewater treatment, and waste oils.

In 1989, the United States Environmental Protection Agency (EPA) submitted a draft Interagency Agreement to the Navy for formalizing and scheduling remedial activities. The contents of this agreement were negotiated in 1990. NAWC is participating in the Installation Restoration Program (IRP), a program run by the Department of Defense to investigate, identify, and control hazardous waste on its own facilities.

Previous investigations at NAWC have found groundwater to be contaminated with volatile organic compounds (VOCs), including methylene chloride, toluene, trichloroethylene (TCE), tetrachloroethylene (PCE), and 1,1,1-trichloroethane (1,1,1-TCEA). The soil is also contaminated with VOCs, petrochemicals (e.g., chrysene and fluorene), petrochemical sludges, lead, and waste oils.

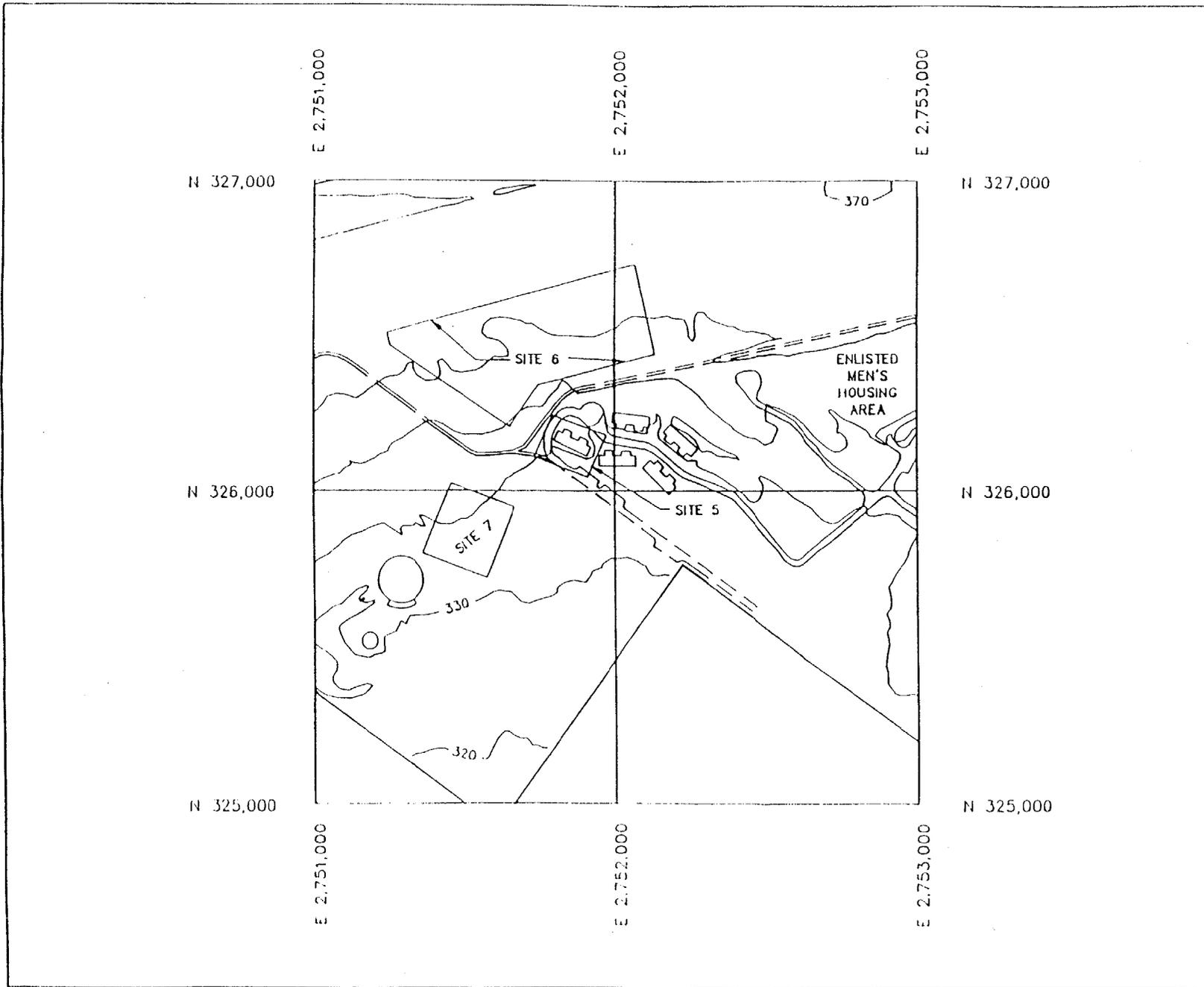
Previous investigations in Area B have found groundwater to be contaminated with low levels of TCE, toluene, carbon tetrachloride, chloromethane, chloroform, and 1,1,1-TCEA.



SITE LOCATION MAP
NAWC AND SURROUNDING AREA

Figure 2, 1





LEGEND

SITE 7 SITE

 TOPOGRAPHIC CONTOUR LINE

NAWC
WARMINSTER, PA

FIGURE 2.2
WASTE
DISPOSAL SITES
5, 6 AND 7
(CONTOUR INTERVAL 10 FEET)

HALLIBURTON NUS
 Environmental Corporation
Adopted From SMC Environmental Services Group, 1991

SCALE: 1"=300' DATE: 10/12/92

2.3 SOUTH RUNWAY LANDFILL - SITE 5

Site 5 is located south of the main runway and adjacent to a baseball field at NAWC Warminster (Figure 2.2). The site reportedly operated from 1955 to 1970 and was rediscovered during construction for the foundation of a housing unit. Site 5 reportedly consisted of six to eight disposal trenches in which paints, solvents, scrap metal, demolition debris, and 30 drums of asphalt were disposed. Each trench was 12 feet wide by 70 feet long and eight feet deep.

After Site 5 was closed, two feet of fill was placed over the disposal area, and the area was reseeded. The Shenandoah Woods Navy townhouse complex was constructed in the vicinity of Site 5.

Sampling of a monitoring well installed in 1982 revealed the presence of copper, chromium, nickel, and zinc. A soil gas survey detected acetone and one unknown volatile organic compound.

2.4 WASTE PIT NO. 3 - SITE 6

Site 6 reportedly consists of an unknown number of disposal pits or trenches on the northern side of the patrol road and the southern side of the main runway (Figure 2.2). Site 6 is north of Site 5 and northeast of Site 7. This site allegedly received paint, solvents, demolition waste, waste oils, flammable waste, and grease trap waste from 1960 to 1980. The site is currently wooded, and debris has been piled on parts of the surface. The site covers an area of about 70,000 square feet.

Sampling of two monitoring wells installed in 1982 and several observation wells revealed the presence of copper, chromium, nickel, and zinc. A photoionization detector (PID) indicated VOC concentrations up to 52 ppm.

2.5 SLUDGE PITS - SITE 7

Site 7 reportedly consisted of two disposal trenches that were used from 1950 to 1955 to receive sludge from the wastewater treatment plant. The site is located south of the main runway and adjacent to the western side of Site 5 (Figure 2.2). Upon site closure in 1955, the trenches were covered with two feet of soil, regraded, and reseeded. This site is currently grass covered and relatively flat.

Sampling of a monitoring well and an observation well installed in 1982 revealed the presence of antimony, copper, chromium, nickel, and zinc. A soil gas survey detected two unknown volatile organic compounds.

3.0 SCOPE OF WORK

The following tasks will be performed:

- Install 27 monitoring wells (including shallow, intermediate, and deep bedrock).
- Sample 36 monitoring wells (27 new wells and nine existing wells).
- Take 10 subsurface soil samples (split-spoon sampler and drill rig).
- Conduct aquifer monitoring (install pressure transducers in wells to monitor long-term level fluctuations).

4.0 SITE CONTAMINANTS

Previous groundwater sampling activities in Area B have revealed low levels of TCE, toluene, carbon tetrachloride, chloromethane, chloroform, 1,1,1-TCEA, copper, chromium, nickel, antimony, and zinc.

Table 4-1 (pages 4-2) presents the contaminants known or suspected to be present in the area of concern and outlines toxicity data.

**TABLE 4-1
NAWC WARMINSTER
POTENTIAL CHEMICAL HAZARDS: AREA B**

Substance	CAS Number	Appearance and Odor	Exposure Limits	Ionization Potential	Toxic and Pharmacologic Effects	Flammability, etc.
Trichloroethene	79-01-6	Colorless liquid with a chloroform-like odor	PEL: 50 ppm TLV: 50 ppm IDLH: Carcinogen	9.45	<ul style="list-style-type: none"> • Headache and dizziness • Nausea and vomiting • Dermatitis • Eye irritant 	Incompatible with strong caustics and chemically active metals.
Toluene	108-88-3	Colorless liquid with a sweet, pungent, benzene-like odor	PEL: 100 ppm TLV: 50 ppm IDLH: 2,000 ppm	8.82	<ul style="list-style-type: none"> • Confusion, euphoria, dizziness, and headache • Dermatitis • Dilated pupils 	Incompatible with strong oxidizers
Carbon tetrachloride	56-23-5	Colorless liquid with a characteristic ether-like odor	PEL: 2 ppm TLV: 5 ppm IDLH: Carcinogen	11.47	<ul style="list-style-type: none"> • CNS depressant • Nausea and vomiting • Skin irritant • Liver and kidney damage 	Incompatible with chemically active metals
Chloromethane (methyl chloride)	74-87-3	Colorless gas with faint, sweet odor	PEL: 50 ppm TLV: 50 ppm IDLH: Carcinogen	11.28	<ul style="list-style-type: none"> • Dizziness, drowsiness, incoordination, confusion • Nausea and vomiting • Abdominal pains 	Incompatible with chemically active metals
Chloroform	67-66-3	Colorless liquid with pleasant odor	PEL: 2 ppm TLV: 10 ppm IDLH: Carcinogen	11.42	<ul style="list-style-type: none"> • Dizziness, mental dullness, disorientation, headache, and fatigue • Eye and skin irritant 	Incompatible with strong caustics and chemically active metals
1,1,1-Trichloroethane (1,1,1-TCEA) (methyl chloroform)	71-55-6	Colorless liquid with a mild chloroform-like odor	PEL: 350 ppm TLV: 350 ppm IDLH: 1,000 ppm	11.00	<ul style="list-style-type: none"> • CNS depressant, headache, poor equilibrium • Eye irritant • Dermatitis 	Incompatible with strong caustics, strong oxidizers, and chemically active metals
Copper	7440-50-8	Metal: Reddish, lustrous, malleable, odorless solid	PEL: 1 mg/m ³ TLV: 1 mg/m ³ IDLH: No evidence	Not applicable	<ul style="list-style-type: none"> • Irritant to eyes, mucous membranes, and pharynx • Dermatitis 	Incompatible with oxidizers, alkalis, sodium azide, and acetylene

**TABLE 4-1
NAWC WARMINSTER
POTENTIAL CHEMICAL HAZARDS: AREA B**

Substance	CAS Number	Appearance and Odor	Exposure Limits	Ionization Potential	Toxic and Pharmacologic Effects	Flammability, etc.
Chromium	7440-47-3	Blue-white to steel-gray, lustrous, brittle, hard solid	PEL: 1 mg/m ³ TLV: 0.5 mg/m ³ IDLH: No evidence	Not applicable	<ul style="list-style-type: none"> • Histologic fibrosis of lungs 	Incompatible with strong oxidizers and alkalis
Nickel	7440-02-0	Metal: Lustrous, silvery solid	PEL: 1 mg/m ³ TLV: 0.05 mg/m ³ IDLH: Carcinogen	Not applicable	<ul style="list-style-type: none"> • Headache, vertigo • Nausea and vomiting • Epigastric pain 	Incompatible with strong acids, sulfur, selenium, wood, and other combustibles
Antimony	7440-36-0	Metal: Silver-white, lustrous, hard brittle solid; scale-like crystals; or a dark gray lustrous powder	PEL: 0.5 mg/m ³ TLV: 0.5 mg/m ³ IDLH: 80 mg/m ³	Not Applicable	<ul style="list-style-type: none"> • Nose, throat, and mouth irritant • Dizziness, headache • Nausea, vomiting, and diarrhea • Skin irritant 	Incompatible with strong oxidizers, acids, halogenated acids
Tetrachloroethylene (Perchloroethylene)	127-18-14	Colorless liquid with a mild, chloroform-like odor	PEL: 100 ppm TLV: 50 ppm IDLH: 500 ppm (carcinogen)	9.32	<ul style="list-style-type: none"> • Eye, nose, and throat irritant • Flushed face and neck • Nausea, vertigo, dizziness 	Incompatible with strong oxidizers and chemically active metals

PEL TWA = Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits; Time Weighted Average

TLV TWA = American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values; Time Weighted Average

IDLH = Immediately Dangerous to Life and Health

IP = Ionization Potential

CNS = Central Nervous System

5.0 RISK ANALYSIS

The primary hazards, although minimal, associated with this investigation include potential exposure via inhalation of vapors and particulates and direct skin/eye contact. Table 4-1 presents the contaminants known or suspected to be present in the areas of study and outlines toxicity data.

The use of real-time monitoring instruments, visual observation, olfactory observation, and perception of irritation will aid in the identification of exposure to site contaminants. Personal protective equipment (PPE) and standard work practices (Sections 7.0 and 6.0 of this plan) will be used when necessary to help reduce or eliminate exposures and, therefore, reduce the potential for adverse health effects.

Table 5-1 (page 5-2) identifies hazards associated with each task and presents control measures that will be taken to reduce or eliminate those hazards.

In addition, physical hazards must also be addressed. Physical hazards could involve the following:

- Contact with energized sources
- Exposure to moving machinery
- Uneven or unstable terrain (slip, trip hazard)
- Strain or muscle pulls from manual lifting
- Noise in excess of 85 dBA
- Cold stress/heat stress
- Overhead and eye hazards

Control efforts for these potential hazards include requirements that machinery on site (i.e., drill rigs) be kept properly maintained, positioned, guarded, and operated. No drilling masts or any such projecting items shall be permitted within a 20-foot radius of energized overhead sources. Also, any areas targeted for subsurface investigation shall first be investigated to determine the presence of underground utilities. No intrusive activities will be permitted until area has been cleared.

Personnel shall be advised of hazards from contact with moving machinery pinch points. Personal protective clothing must fit properly and be taped, not only to minimize chemical exposure but also to minimize potential entanglement with moving machinery. Additionally, equipment will be shut down and locked out before maintenance functions are performed.

**TABLE 5-1
RISK ANALYSIS SUMMARY**

Task	Potential Hazards	Controls
Monitoring well installation and subsurface soil sampling	Inhalation of airborne contaminants	<ul style="list-style-type: none"> • Stand upwind. • Utilize monitoring instruments. • Use proper respiratory PPE (Section 7.0) • Wet down dusty areas (if appropriate).
	Direct contact with contaminants	<ul style="list-style-type: none"> • Avoid unnecessary contact. • Utilize PPE (Section 7.0) • Follow decontamination procedures (Section 9.0) • Utilize good personal hygiene practices. • Follow "Site Standard Work Practices" (Section 6.0).
	Ingestion of contaminants	<ul style="list-style-type: none"> • No hand-to-mouth contact. • Utilize good personal hygiene practices. • Follow decontamination procedures (Section 9.0). • Follow "Site Standard Work Practices" (Section 6.0).
	Contact with moving/rotating machinery parts	<ul style="list-style-type: none"> • Follow "Site Standard Work Practices" (Section 6.0). • Do not operate any equipment unless all appropriate machine guarding devices are in place and in proper working order.
Monitoring well installation and subsurface soil sampling (continued)	Contact with overhead or underground utilities	<ul style="list-style-type: none"> • Follow "Site Standard Work Practices" (Section 6.0). • Underground utilities must be identified prior to drilling.
	Excessive noise	<ul style="list-style-type: none"> • Ear protection will be available on site.
	Overhead and eye hazards	<ul style="list-style-type: none"> • Hard hats and safety glasses will be worn if within 20 feet of drilling operations.
Aquifer monitoring and groundwater sampling	Inhalation, direct contact, and ingestion exposures to contaminants	<ul style="list-style-type: none"> • Same as previous inhalation, direct contact, and ingestion control entries

During lifting tasks, personnel are to lift with the force of the load carried by their legs and not by their backs. An appropriate number of personnel must be used when lifting or handling heavy equipment. These procedures are to be employed to minimize the potential for back strain.

Ear protection will be available on site. Use will be determined by the site safety officer based on the following: If individuals must raise their voices to be heard when standing within two feet of a co-worker, ear protection must be worn.

Employees will be monitored for signs of heat/cold stress. Fluids will be increased, and breaks will be provided.

Overhead and eye hazards will be controlled by utilizing hard hats and safety glasses if personnel are within 20 feet of drilling operations. Personnel must also be aware of their surroundings with respect to overhead and eye hazards.

Additional control measures for these physical hazards are included in Section 5.0, Standard Work Practices.

6.0 SITE STANDARD WORK PRACTICES

All SI activities will follow HNUS Health and Safety Standard Operating Procedures where appropriate.

The following requirements are HNUS health and safety standard work procedures:

- Eating, drinking, chewing gum or tobacco, taking medication, and smoking are prohibited in any location where the possibility for the transfer of contamination exists.
- Upon leaving a contaminated area, hands and face must be thoroughly washed. Any protective outer clothing is to be decontaminated, removed, and left at a designated area before personnel enter a clean area.
- Contact with potentially contaminated substances must be avoided. Whenever possible, contact with the ground or with contaminated equipment must also be avoided.
- No facial hair, which interferes with a satisfactory fit of the mask-to-face seal, is allowed on personnel required to wear respiratory protection equipment.
- The use of contact lenses is prohibited for all hazardous waste site operations.
- All personnel must procure a site-specific health and safety plan from the project health and safety officer prior to commencing work on site. Additionally, a Site Safety Follow-Up Report must be filed with each trip report following completion of a task.
- All personnel must satisfy medical monitoring procedures.
- All personnel must follow action levels presented in the Personal Protective Equipment section of this report (section 7.0).
- All electrical tools must be connected to a ground fault interrupter (GFI) and/or must be grounded with a third wire, and the cord must be double insulated and in good working condition.

- No flames or open fires will be permitted on site.
- Site personnel are not to undertake any activity that would be considered a confined-space entry without first being trained in the proper procedures and obtaining a Confined-Space Entry Permit.
- Site personnel must immediately notify HNUS Health Sciences of all incidents for OSHA recordkeeping purposes.
- If personnel note any warning properties of chemicals (irritation, odors, symptoms, etc.) or even remotely suspect the occurrence of exposure, they must immediately notify the Health and Safety Officer (HSO) for further direction.
- All site personnel must complete a medical data sheet to be maintained on site.
- Decontamination solutions and sample preservatives must be handled in well-ventilated areas. Stand upwind when possible.
- The "buddy system" shall be employed for all site activities.
- Post Exhibits 1 and 2 (pages 6-3 and 6-4) on site, preferably near the most available telephone.
- Post OSHA poster on site.
- Material Safety Data Sheets for all substances brought on site will be maintained on site. All personnel will review this information before conducting work.
- No drilling within 20 feet in any direction of overhead power lines will be permitted. The locations of all underground utilities must be identified and marked before any subsurface activities are initiated.
- Personnel must develop hand signals with equipment operators.

- All drill rigs and other machinery with exposed moving parts must be equipped with an operational emergency stop device. Drillers and geologists must be aware of the location of this device. This device must be tested prior to job initiation and periodically thereafter. The driller and helper shall not simultaneously handle moving augers unless there is a standby person to activate the emergency stop.
- The driller must never leave the controls while the tools are rotating unless all personnel are kept clear of the rotating equipment.
- A long-handled shovel or equivalent must be used to clear drill cuttings away from the hole and from rotating tools. Hands and/or feet are not to be used for this purpose.
- A remote sampling device must be used to sample drill cutting if the tools are rotating or if the tools are readily capable of rotating. Samplers must not reach into or near the rotating equipment. If personnel must work near any tools that could rotate, the driller must shut down the rig prior to initiating such work.
- Drillers, helpers, and samplers must secure all loose clothing when in the vicinity of drilling operations.
- Only equipment that has been approved by the manufacturer may be used in conjunction with site equipment and specifically to attach sections of drilling tools together. Pins that protrude excessively from augers shall not be allowed.
- No person shall climb the drill mast while tools are rotating.

**EXHIBIT 1
EMERGENCY REFERENCE INFORMATION
(Post On Site)**

Site: NAWC Warminster Project Number: N62472-90-1298/CTO 0134

Emergency Information:

Ambulance (Name):	<u>Warminster Township</u>	<u>(215) 441-0333</u>
	<u>NAWC Security/</u>	<u>(215) 441-2097*/441-3333*</u>
	<u>NAWC Ambulance</u>	
Hospital (Name):	<u>Medical College</u>	<u>(215) 441-6600</u>
	<u>Hospital, Bucks</u>	
	<u>County Campus</u>	
Police (Local or State):	<u>Warminster Township</u>	<u>(215) 672-1000</u>
Fire Department:	<u>Warminster Township</u>	<u>(215) 674-3333</u>
	<u>Fire Department</u>	
Project Manager:	<u>Jeff Orient</u>	<u>(412) 921-8778 (office)</u>
Site Health and Safety Officer:	<u>TBA</u>	<u>On Site</u>
NAWC Dispensary:		<u>(215) 441-3007*</u>

*From NAWC, dial the last four digits only.

Emergency Contacts (Medical and Health):

- Regional Physician: Occupational Health Center
Office: (215) 431-2262
- NAVY CLEAN Health and Safety Manager: Matthew M. Solitis, CSP
Office: (412) 921-8912
- National Response Center (for environmental emergency only): 1-800-424-8802
- Poison Control Center: (215) 922-5523

Directions to Hospital:

East on 132 to Newtown Road. Turn right onto Newtown Road. Hospital is two blocks down on the left.

Emergency Procedure for Overt Personnel Exposure:

- Skin Contact: Remove contaminated clothing. Wash immediately with water. Use soap, if available.
- Inhalation: Remove from contaminated atmosphere. Use artificial respiration, if necessary. Transport to hospital.
- Ingestion: Never induce vomiting on an unconscious person. Also, never induce vomiting when acids, alkalis, or petroleum products are suspected. Contact the Poison Control Center.



AMERICAN RED CROSS

First Aid

EMERGENCY TELEPHONE NUMBERS

Police: _____
 Fire Department: _____
 Doctor: _____
 Ambulance: _____
 Hospital: _____
 Poison Control Center: _____

BITES

Animal Bites - Thoroughly wash the wound with soap and water. Flush the area with running water and apply a sterile dressing. Immobilize affected part until the victim has been attended by a physician. See that the animal is kept alive and in quarantine. Obtain name and address of the owner of the animal.

Insect Bites - Remove "stinger" if present. Keep affected part down below the level of the heart. Apply ice bag. For minor bites and stings, apply soothing lotions, such as calamine.

BURNS AND SCALDS

Minor Burns - DO NOT APPLY VASELINE OR GREASE OF ANY KIND. Apply cold water applications until pain subsides. Cover with a dry, sterile gauze dressing. Do not break blisters or remove tissue. Seek medical attention.

Severe Burns - Do not remove adhered particles of clothing. Do not apply ice or immerse in cold water. Do not apply ointment, grease, or vaseline. Cover burns with thick sterile dressings. Keep burned feet or legs elevated. Seek medical attention immediately.

Chemical Burns - Wash away the chemical-soaked clothing with large amounts of water. Remove victim's chemical-soaked clothing. If dry lime, brush away before flushing. Apply sterile dressing and seek medical attention.

CRAMPS

Symptoms - Cramps in muscles of abdomen and extremities. Heat exhaustion may also be present.

Treatment - Same as for heat exhaustion.

CUTS

Apply pressure with sterile gauze dressing and elevate the area until bleeding stops. Apply a bandage and seek medical attention.

EYES

Foreign Objects - Keep the victim from rubbing his eye. Flush the eye with water. If flushing fails to remove the object, apply a dry protective dressing and consult a physician.

Chemicals - Flood the eye thoroughly with water for 15 minutes. Cover the eye with a dry pad and seek medical attention.

FAINTING

Keep the victim lying down. Loosen tight clothing. If victim vomits, roll him onto his side or turn his head to the side. If necessary, wipe out his mouth. Maintain an open airway. Bathe his face gently with cool water. Unless recovery is prompt, seek medical attention.

FRACTURES

Deformity of an injured part usually means a fracture. If fracture is suspected, splint the part. DO NOT ATTEMPT TO MOVE THE INJURED PERSON; seek medical attention immediately.

FROSTBITE

Symptoms - Just before frostbite occurs, the skin may be flushed, then change to white or grayish-yellow. Pain may be felt early and then subside. Blisters may appear; affected part feels very cold and numb.

Treatment - Bring victim indoors and cover the frozen area; provide extra clothing and blankets. Rewarm frozen area quickly by immersion in warm water - - NOT HOT WATER. DO NOT RUB THE PART. Seek medical attention immediately.

HEAT EXHAUSTION

Caused by exposure to heat (either sun or indoors).

Symptoms - Near-normal body temperature. Skin is pale and clammy. Profuse sweating, tiredness, weakness, headache, perhaps cramps, nausea, dizziness, and possible fainting.

Treatment - Keep in lying position and raise victim's feet. Loosen clothing, and apply cool wet cloths. If conscious, give sips of salt water (1 teaspoon of salt per glass) over a period of one hour. If vomiting occurs, discontinue the salt water. Seek medical attention immediately.

SUNSTROKE

Symptoms - Body temperature is high (106°F or higher). Skin is hot, red, and dry. Pulse is rapid and strong. Victim may be unconscious.

Treatment - Keep victim in lying position with head elevated. Remove clothing and repeatedly sponge the bare skin with cool water or rubbing alcohol. Seek medical attention immediately.

POISONING

Call the Poison Control Center for instruction on immediate care. If victim becomes unconscious, keep the airway open. If breathing stops, give artificial respiration by mouth-to-mouth breathing. Call an emergency squad as soon as possible.

POISON IVY

Remove contaminated clothing; wash all exposed areas thoroughly with soap and water followed by rubbing alcohol. If rash is mild, apply calamine or other soothing skin lotion. If a severe reaction occurs, seek medical attention.

PUNCTURE WOUNDS

If puncture wound is deeper than skin surface, seek medical attention. Serious infection can arise unless proper treatment is received.

SPRAINS

Elevate injured part and apply ice bag or cold packs. DO NOT SOAK IN HOT WATER. If pain and swelling persist, seek medical attention.

UNCONSCIOUSNESS

Never attempt to give anything by mouth. Keep victim lying flat; maintain open airway. If victim is not breathing, provide artificial respiration by mouth-to-mouth breathing and call an emergency squad as soon as possible.

EXHIBIT 2

AMERICAN RED CROSS INFORMATION SHEET



HALLIBURTON NUS
Environmental Corporation

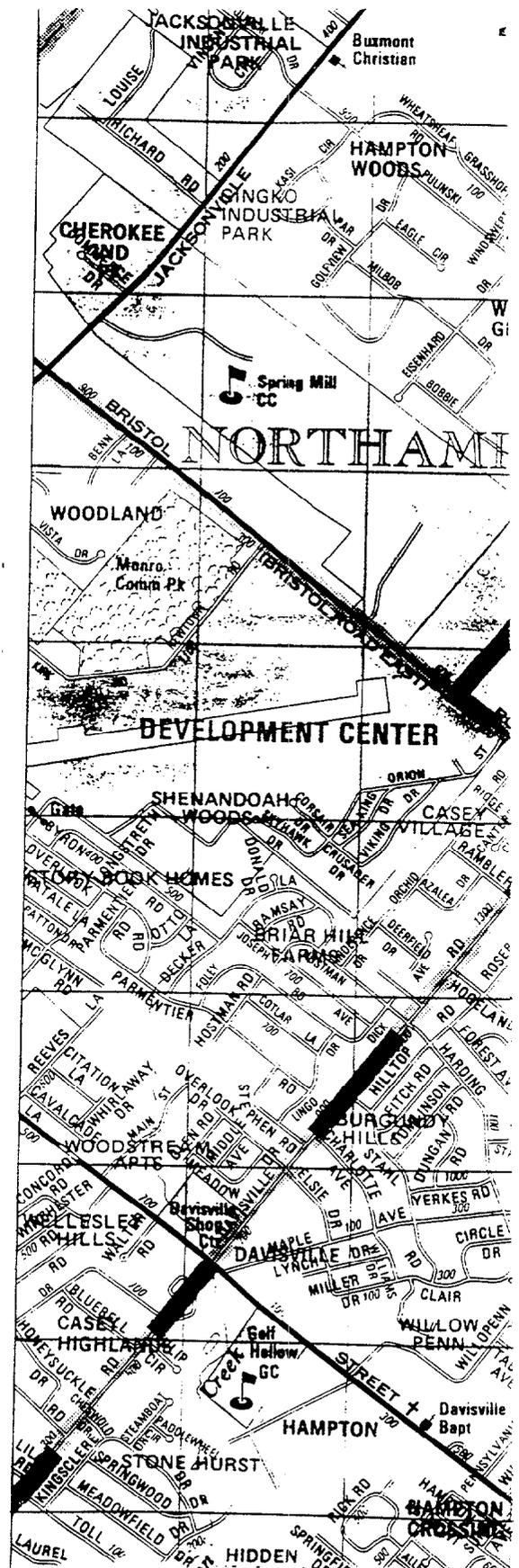
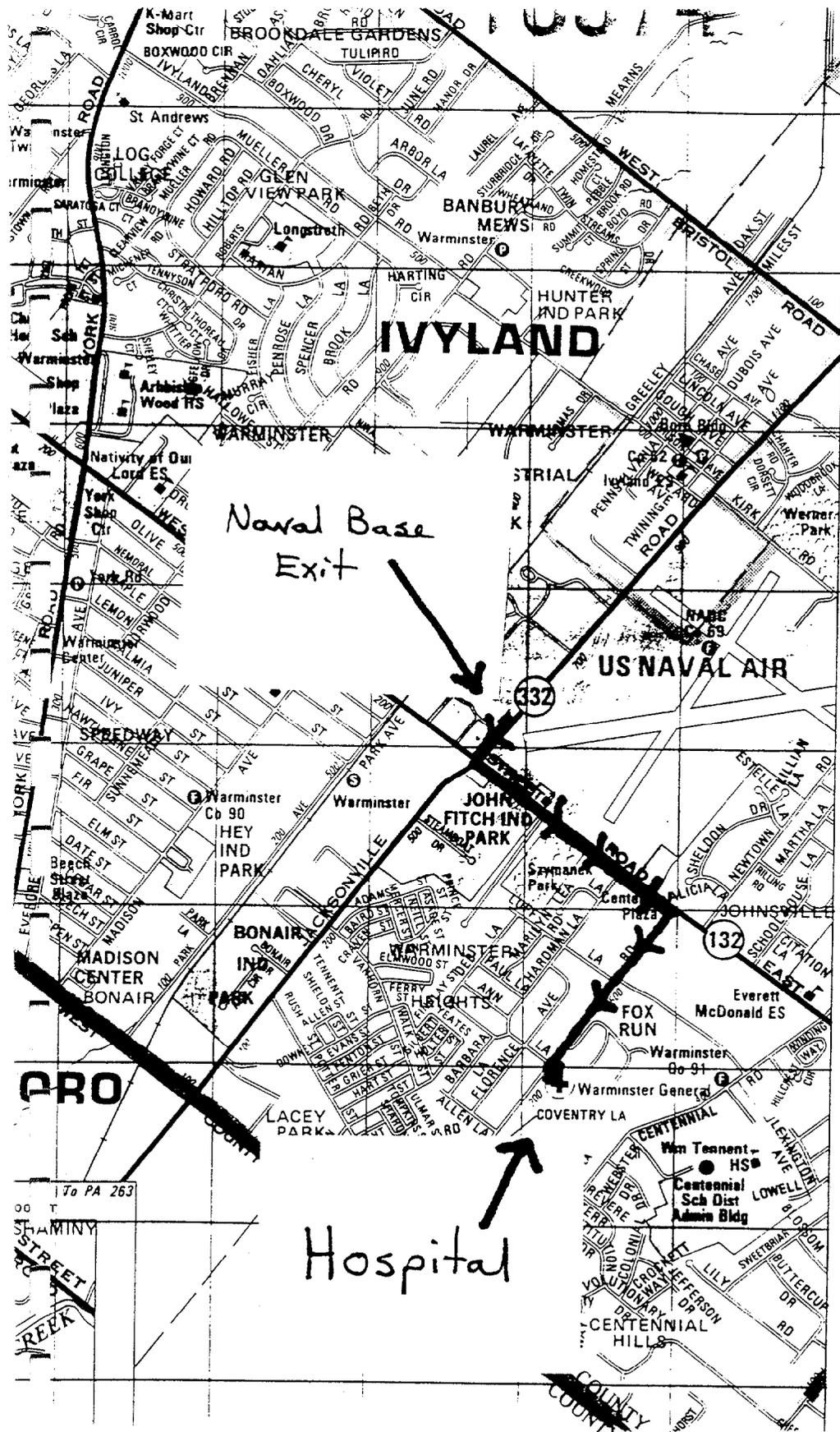


Figure 6.1
MAP TO HOSPITAL

7.0 PERSONAL PROTECTIVE EQUIPMENT

PPE anticipated for use has been summarized in Table 7-1 (below) of this health and safety plan.

**TABLE 7-1
PPE ANTICIPATED FOR EACH SITE TASK/OPERATION**

Task/Operation	PPE Anticipated
Well drilling and subsurface soil sampling	Hard hat, safety glasses with side shields, steel-toed hard-soled work boot, Tyvek, surgical-style inner glove, nitrile outer glove, disposable boot covers. Respirators as per Table 7-2. Gloves and boots will be taped. Note: If monitoring instrument readings exceed background and the task presents a splash potential or possible contact with contaminated materials, affected personnel will upgrade to Saranex coveralls and a viton middle glove.
Aquifer monitoring and groundwater sampling	Steel-toed, hard-soled work boot, Tyvek, surgical style inner glove, nitrile outer glove, disposable boot covers, splash goggles. Gloves and boots will be taped. Respirators as per Table 7-2. Note: If monitoring instrument readings exceed background and the task presents a splash potential or possible contact with contaminated materials, affected personnel will upgrade to Saranex coveralls and a viton middle glove.

Action levels with respect to respiratory protection requirements and/or withdrawal from site are summarized in Table 7-2 (below).

**TABLE 7-2
ACTION LEVELS FOR RESPIRATORY PROTECTION**

Monitoring Device	Action Level	Action
Flame Ionization Detector or Photoionization Detector	≤ Background	Continue monitoring
Flame Ionization Detector or Photoionization Detector	> Background	Monitoring breathing zones
Flame Ionization Detector or Photoionization Detector	> Background at breathing zone	Retreat and let ventilate. If readings are sustained, then upgrade to pressure-demand supplied-air respirator

Note: Level C full-face air-purifying respirators (APR) with GMC-H cartridges will be worn if dry and dusty conditions exist.

8.0 MEDICAL SURVEILLANCE

8.1 REQUIREMENTS FOR HNUS PERSONNEL

HNUS personnel, whose work may require their presence in areas where potential exposures to hazardous materials exist, shall participate in the HNUS medical monitoring program and must have a completed Medical Data Sheet (Exhibit 3, page 8-2) attached to this HASP. All medical examinations performed for HNUS personnel for these purposes shall be conducted in accordance with OSHA General Industry Standards 29 CFR 1910.120 and 1910.134.

8.2 REQUIREMENTS FOR SUBCONTRACTORS

Subcontractors are required to obtain a certificate of their ability to perform hazardous waste site work and to wear respiratory protection. The Subcontractor Medical Approval Form (Figure 8.1, page 8-3) can be used to satisfy this requirement, providing it is properly completed and signed by a licensed physician. Subcontractors who have a company medical surveillance program meeting the requirements of paragraph (f) of 29 CFR 1910.120 can substitute Figure 8.1 with a letter, on company letterhead, containing all of the information in the example letter presented as Figure 8.2. Figure 8.2 and Figure 10.1 can be combined into one letter.

EXHIBIT 3
MEDICAL DATA SHEET

This form must be completed by all on-site HNUS personnel and subcontractors, prior to the commencement of activities, and shall be kept in the site command post during site activities. This form must be delivered to any attending physician when medical assistance is needed.

Site _____

Name _____ Home Telephone (____) _____

Address _____

Date of most recent physical examination* ____ / ____ / ____

Age _____ Height _____ Weight _____

Name of next of kin _____ Telephone (____) _____

Drug allergies or other allergies _____

Previous Illnesses or Exposures to Hazardous Substances:

Current Medication (prescription and non-prescription):

Medical Restrictions _____

Name, address, and phone number of personal physician _____

*Confirmed by Site HSO _____
Signature of HSO

Date

For employees of _____
Company Name

Participant Name: _____ Date of Exam: _____

Part A

The above-named individual has:

1. Undergone a physical examination in accordance with OSHA Standard 29 CFR 1910.120, paragraph (f) and found to be medically
 qualified to perform work at the _____ work site
 not qualified to perform work at the _____ work site
and,
2. Undergone a physical examination as per OSHA 29 CFR 1910.134 (b)(10) and found to be medically
 qualified to work in respiratory protection
 not qualified to perform work in respiratory protection

My evaluation has been based on the following information, as provided to me by the employer.

- A copy of OSHA Standard 29 CFR 1910.120 and appendices.
- A description of the employee's duties as they relate to the employee's exposures.
- A list of known/suspected contaminants and their concentrations (if known).
- A description of any personal protective equipment used or to be used.
- Information from previous medical examinations of the employee which is not readily available to the examining physician.

Part B

I, _____, have examined _____
Physician's Name (print) Participant's Name (print)

and have determined the following information:

1. Results of the medical examination and tests (excluding findings or diagnoses unrelated to occupational exposure):

**FIGURE 8.1
SUBCONTRACTOR MEDICAL APPROVAL FORM**



2. Any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health:

3. Recommended limitations upon the employee's assigned work:

I have informed this participant of the results of this medical examination and any medical conditions which require further examination or treatment.

Based on the information provided to me, and in view of the activities and hazard potentials involved at the _____ work site, this participant

- may
- may not

perform his/her assignment task.

Physician's Signature _____
Address _____
Phone Number _____

NOTE: Copies of test results are maintained and available at:

Address

FIGURE 8.1 (CONTINUED)
SUBCONTRACTOR MEDICAL APPROVAL FORM



The following statements must be typed on company letterhead and signed by an officer of the company.

LOGO
XYZ CORPORATION
555 E. 5th Street
Nowheresville, Kansas 55555

Month, day, year

Mr. Neil Teamerson, Project Manager
Halliburton NUS Corporation
993 Old Eagle School Road, Suite 415
Wayne, Pennsylvania 19087-1710

Subject: Medical Surveillance
NAWC Warminster

Dear Mr. Teamerson:

As an officer of XYZ Corporation, I hereby state that the persons listed below participate in a medical surveillance program meeting the requirements contained in paragraph (f) of Title 29 of the Code of Federal Regulations, Part 1910.120 entitled "Hazardous Waste Operations and Emergency Response: Final Rule." I further state that the persons listed below have had physical examinations under this program within the last 12 months and that they have been cleared, by a licensed physician, to perform hazardous waste site work and to wear respiratory protection. I also state that, to my knowledge, no person listed below has any medical restrictions that would preclude him/her from performing their assigned activities at the NAWC Warminster Site.

LIST EMPLOYEE NAMES AND DATES OF MOST RECENT PHYSICAL EXAMS HERE

Should you have any questions, please contact me at 555/555-5555.

Sincerely,

(Name of Company Officer)
Title

FIGURE 8.2
MEDICAL SURVEILLANCE LETTER



9.0 DECONTAMINATION PROCEDURES

All employees and equipment leaving the work site must go through proper decontamination procedures.

Specific PPE Decontamination Procedures:

- Equipment drop
- Wash and rinse boot covers and outer gloves
- Remove tape
- Remove SCBA (if worn) harness
- Remove boot covers and outer gloves
- Remove coverall
- Remove face mask (if worn)
- Remove inner gloves

Decontamination of Sampling Bottles or Other Equipment:

- If necessary, bottles containing samples will be sprayed with Alconox and lightly wiped with clean paper towels.
- Follow Navy specifications for equipment decontamination.

Decontamination Evaluation and Modification:

- Any grossly contaminated reusable items (i.e., boot covers) that are not visibly cleaned via decontamination efforts are to be discarded.
- Discard and replace decontaminated wash and rinse solutions if/when they become visibly discolored or otherwise noticeably affected.
- Screen employees with monitoring instruments before and after decontamination operations periodically.

Decontamination and/or disposal procedures for decontamination equipment, solutions, or solvents shall follow Navy directions, to be determined by the Project Manager and implemented by the FOL.

10.0 TRAINING REQUIREMENTS

10.1 INTRODUCTORY AND REFRESHER TRAINING

10.1.1 Requirements for HNUS Personnel

All HNUS personnel must complete 40 hours of introductory hazardous waste site training prior to performing work at NAWC Warminster. Additionally, HNUS personnel who have had introductory training more than 12 months prior to site work must have completed eight hours of refresher training within the past 12 months before being cleared for site work.

In addition, the HNUS field operations leader is required to have completed an eight-hour supervisory training course.

Documentation of HNUS introductory and refresher training is specified on Table 10-1 (below).

**TABLE 10-1
PREVIOUS TRAINING RECORD**

Name	Type(s) of Training Received	Date(s) Training Received
Paul Persing	40-Hour Introductory 8-Hour Refresher 8-Hour Supervisory	January 1987 March 1993 June 1990
Don Whalen	40-Hour Introductory 8-Hour Refresher 8-Hour Supervisory	October 1989 March 1993 June 1990
Kevin Kilmartin	40-Hour Introductory 8-Hour Refresher 8-Hour Supervisory	November 1989 April 1993 June 1990

* Training records for additional HNUS personnel will be added as assignments are made.

10.1.2 Requirements for Subcontractors

All HNUS subcontractor personnel must have completed introductory hazardous waste site training or equivalent work experience as defined in OSHA Standard 29 CFR 1910.120(e) and eight hours of refresher training meeting the requirements of 29 CFR 1910.120(e)(8) prior to performing field activities at NAWC Warminster Site. HNUS subcontractors must certify that each employee has had such training by sending HNUS a letter, on company letterhead, containing the information in the example letter provided as Figure 10.1 (page 10-2). Figures 10.1 and 8.2 can be combined into one letter.

The following statements must be typed on company letterhead and signed by an officer of the company.

LOGO
XYZ CORPORATION
555 E. 5th Street
Nowheresville, Kansas 55555

Month, day, year

Mr. Neil Teamerson, Project Manager
Halliburton NUS Corporation
993 Old Eagle School Road, Suite 415
Wayne, Pennsylvania 19087-1710

Subject: OSHA Compliance and Training
NAWC Warminster Site

Dear Mr. Teamerson:

As an officer of XYZ Corporation, I hereby state that I am aware of the potentially hazardous nature of the subject project. I also understand that it is our responsibility to comply with all applicable occupational safety and health regulations including those stipulated in Title 29 of the Code of Federal Regulations (CFR), Parts 1900 through 1910 and Part 1926.

I also understand that Title 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response: Final Rule," requires, but is not limited to, medical surveillance, for applicable employees, and appropriate level of training as required in paragraph (e) of 29 CFR 1910.120 for employees engaged in certain hazardous waste operations. I hereby state that I have reviewed these requirements; that I understand Title 29 of the CFR, Parts 1900 through 1910, and Part 1926; and that XYZ Corporation and all of its employees who will perform work at the NAWC Warminster Site are in full compliance.

The following employees have had 40 hours of introductory hazardous waste site training or equivalent work experience as required by 29 CFR 1910.120(e) and have had eight hours of refresher training as required by 29 CFR 1910.120(e)(8).

LIST EMPLOYEE NAMES, TYPE(S) OF TRAINING RECEIVED, AND DATES OF TRAINING HERE

Sincerely,

(Name of Company Officer)
Title

FIGURE 10.1
OSHA COMPLIANCE LETTER



10.2 SITE-SPECIFIC TRAINING

HNUS will provide site-specific training to all HNUS employees who will perform work on this project. This training will only be provided once, and personnel who do not attend will not be permitted to perform work at this project. Site-specific training will include the following:

- Names of personnel and alternates responsible for site safety and health
- Safety, health, and other hazards present on site
- Use of PPE

- Work practices to minimize risks from hazards
- Safe use of engineering controls and equipment
- Medical surveillance requirements
- Signs and symptoms of overexposure
- The contents of the health and safety plan and addenda
- The elements of the site emergency response plan site
- Review of relevant MSDS for substances brought on site

This training will be documented using Figure 10.2. Any additional training will be documented using Figure 10.3.

Attendees	Subject - Coverage	Instructor	Date
<p align="center">FIGURE 10.3</p> <p>ADDITIONAL SITE-SPECIFIC TRAINING RECORD</p>			

11.0 EMERGENCY RESPONSE PLAN (ERP)

Through the course of site activities, potentials for emergency response efforts exist. Pre-emergency planning (such as determining and/or verifying appropriate off-site emergency response agencies) is the responsibility of the site HSO. Emergency reference information is included in Site Standard Work Practices (section 6.0) of this HASP. The site HSO is also responsible for determining and documenting the following information, upon arrival at the NAWC Site, prior to the initiation of any field activities and for communicating these requirements to all affected site personnel.

In the event of any emergencies (i.e., fires, significant spills or releases, etc.), site personnel shall be immediately evacuated to a safe place of refuge and shall notify the HNUS Project Manager (Jeff Orient) and the Health and Safety Manager (HSM) (Matthew M. Soltis) and any appropriate off-site response agencies. In view of this approach, this section of the HASP is provided to be in compliance with OSHA Standard 29 CFR 1910.38(a) (as permitted by OSHA 29 CFR 1910.120 (I)(1)(ii)).

11.1 EMERGENCY ESCAPE PROCEDURES AND ESCAPE ROUTE ASSIGNMENTS

Emergency escape routes and safe places of refuge shall be identified and established for each of the work site locations and communicated to all affected personnel prior to task initiation. When these routes and locations are designated, consideration shall be given to factors such as accessibility, prevalent and/or existing wind speed and direction, distance from potentially affected areas, etc. The information shall be modified, if necessary, as work progresses. Any such modifications shall be effected by the site HSO.

11.2 PROCEDURES TO BE FOLLOWED BY PERSONNEL WHO MUST REMAIN ON SITE TO OPERATE ANY CRITICAL OPERATIONS BEFORE EVACUATING

If the designated emergency evacuation signal is given, all personnel at the work site are to immediately report to the designated safe place of refuge via the identified primary (or secondary) emergency escape routes indicated by the site HSO. At the time of this ERP preparation, it is not anticipated that any personnel will need to remain at their work site to maintain any critical operations. If this condition should change, the site HSO shall identify the personnel and their responsibilities in this regard and amend this plan accordingly. Any such modifications must be communicated to the HNUS HSM for concurrence.

11.3 PROCEDURES TO ACCOUNT FOR ALL PERSONNEL FOLLOWING AN EVACUATION

In the event that an emergency evacuation is effected during the course of site work at any of the site areas, personnel shall immediately report to the designated refuge location and remain there. The HSO, assisted by the Field Team Leader, shall conduct a roll call (using the site logbook) to account for all personnel to ensure that a total work site evacuation has taken place. The Field Team Leader shall be responsible for concurrently initiating the emergency communication procedure (notifying NAWC Warminster personnel). If/when all personnel have been accounted for, an evaluation of the event that led to the evacuation shall be conducted to determine if work is to be resumed (and, if so, under what conditions - if any) or if personnel are to go through any necessary decontamination efforts and leave the site. This evaluation is to be performed by the site HSO, with assistance from the Field Team Leader, and guidance from the HNUS HSM and appropriate Navy personnel. Under no circumstances are workers to depart from the refuge location until so directed.

If the roll call identifies that any personnel are not accounted for, this information shall be immediately communicated to the off-site emergency response agency upon their arrival. This information is to be supplemented with any additional information available that could be of assistance in conducting rescue operations (i.e., last known location of the missing personnel, etc.). Site personnel are not authorized to participate in emergency response/rescue operations.

11.4 RESCUE AND MEDICAL DUTIES

Site personnel are not authorized to participate in rescue and first aid procedures. However, any personnel present who are trained to perform emergency first aid activities may perform these functions if needed. Any such personnel are identified below:

Name	Trained In	Certified By	Expiration Date of Certification
1.	<hr/> <hr/>		

Any use of first aid equipment must be documented on the attached First Aid Supply Usage Form (page 11-3).

11.5 EMERGENCY REPORTING PROCEDURES

Upon arrival at the work site, prior to the initiation of any field activities, the site HSO shall obtain the information specified on the attached Emergency Reference and American Red Cross First Aid forms and post copies of these near all on-site telephones (Exhibits 1 and 2 in Section 6.0).

Emergency reporting functions shall be the responsibility of the Field Team Leader. The Field Team Leader will become thoroughly familiar with this plan prior to the initiation of any site work activities.

In the event that an emergency incident occurs and response assistance is necessary, the Field Team Leader shall contact the appropriate Navy agency (or agencies) and communicate the following information:

- Nature of the incident (fire, spill, chemical exposure, physical injury, etc.)
- Number of injuries and type(s) of injury (injuries)
- Possible contaminants that may be encountered in response efforts

If off-site emergency response is needed, those agencies will be contacted by Navy personnel. On-site emergency event coordination efforts (i.e., controlling the affected areas, accounting for site personnel, etc.) shall be the responsibility of the HNUS site HSO, until/unless relieved of these duties by the arrival of appropriate emergency response personnel.

11.6 SITE EMERGENCY ALARM SYSTEM

Work areas are anticipated to consist of small areas where all personnel are within visible and audible range of each other and will therefore not need any special alarm systems as long as verbal communication is not hampered.

11.7 ERP INITIAL TRAINING AND REFRESHER TRAINING

All site personnel shall be trained in the contents of this ERP as part of the initial site-specific health and safety training. All site visitors shall be informed of restricted areas, emergency communication signals, refuge location, and other safety requirements. Site visitors must be escorted by HNUS or NAWC personnel at all times. Any visitors must also be entered in the site logbook so they can be accounted for in the event of any evacuations.

12.0 AIR MONITORING

Monitoring/Sampling Equipment Checklist

One HNu P1-101 equipped with an 11.7 eV probe will be utilized for each activity. The 11.7 eV probe was selected because many of the site contaminants have ionization potentials exceeding 10.2 eV.

The above-specified instrument shall be used on a frequent basis throughout all activities. At a minimum, monitoring will be conducted at the beginning of each task and frequently during all site activities. Ambient air will be monitored, as well as workers' breathing zones. From a health and safety standpoint, workers' breathing zones are the primary areas of concern. If at any time these instruments indicate a potential hazard, monitoring will be performed more frequently. See Section 7.0 of this HASP for additional information regarding instrument action levels.

Methods of Maintenance and Calibration

All equipment maintenance and calibration efforts shall be conducted by Thomas Patton at the Halliburton NUS Pittsburgh warehouse facility. Additionally, daily field calibrations and operational checks will be conducted and documented by the Site Safety Officer. These efforts shall be performed in accordance with the following Halliburton NUS Health and Safety Standard Operating Procedures (SOPs):

- No. ME01: Use, Calibration, and Maintenance of the HNU PI-101

Field Calibration

The results of instrument calibration performed in the field must be recorded on table 12-1 (page 12-2) and returned to the Health Sciences Department with the Site Health and Safety Follow-Up Report.

Direct-Reading Instrument Response Data

Any readings obtained through the use of direct-reading instruments must be recorded throughout the duration of project activities. This information is to be recorded on Table 12-2 (page 12-4) and returned to the Halliburton NUS HSM with the Site Health and Safety Follow-Up Report at the conclusion of the project site activities.

13.0 CONFINED-SPACE ENTRY

No confined-space operations are anticipated to be involved in the performance of planned project activities. Therefore, specific procedures for such efforts are not applicable and are not addressed in the HASP.

APPENDIX A
SITE HEALTH AND SAFETY
FOLLOW-UP REPORT

SITE HEALTH AND SAFETY FOLLOW-UP REPORT

Appendix A must be filled out and returned to the Site Health and Safety Officer after each site visit.

Person responsible for follow-up report: _____

Actual date(s) of work: _____

1. **Actual Project Team:**

Halliburton NUS Personnel	Discipline/Tasks

Non-Halliburton NUS Personnel	Discipline/Tasks

2. **Personal Protective Equipment Used:**

• Level of Respiratory Protection Used	Activity

• Field Dress	Activity

4. Incident Report Information

Did any team member report:

	<u>Yes</u>	<u>No</u>
• Chemical exposure	_____	_____
• Illness, discomfort, or unusual symptoms	_____	_____
• Environmental problems (heat, cold, etc.)	_____	_____
• Injury	_____	_____

Explain: _____

Was an Employee Incident Report Completed? _____ Yes _____ No

5. Evaluation of Site Health and Safety Plan

Was Health and Safety Plan adequate? _____ Yes _____ No

What changes would you recommend?

SCBA LOG

Site: _____

Location: _____

Dates of Investigation: _____

User	Date of Use	SCBA Number	Satisfactory Checkout (Yes/No - Initials)	Date Cleaned

SCBA Performance Comments:

Site Manager

Date

Return to HSO at Completion of Activity

INCIDENT REPORT

Report No. _____

Site: _____

Project No. _____

Location: _____

Date of Report: _____ Preparer's Name: _____

Name and Address of Injured: _____ SSN: _____ Age: _____

Sex: _____

Years of Service: _____ Time at Present Job: _____ Title/Classification: _____

Division/Department: _____ Date of Incident: _____ Time: _____

Incident Category: _____ Motor Vehicle _____ Property Damage _____ Fire
_____ Chemical Exposure _____ Near Miss _____ Other

Severity of Injury or Illness: _____ Nondisabling _____ Disabling
_____ Medical Treatment _____ Fatality

Amount of Damage: \$ _____ Property Damage: _____

Estimated Number of Days Away from Job: _____

Nature of Injury or Illness: _____

1. Classification of Injury:

_____ Fractures	_____ Heat Burns	_____ Cold Exposure
_____ Dislocations	_____ Chemical Burns	_____ Frostbite
_____ Sprains	_____ Radiation Burns	_____ Heat Stroke
_____ Abrasions	_____ Bruises	_____ Heat Exhaustion
_____ Lacerations	_____ Blisters	_____ Concussion
_____ Punctures	_____ Toxic Respiratory	_____ Faint/Dizziness
_____ Bites	_____ Exposure	_____ Toxic Respiratory
_____ Respiratory Allergy	_____ Toxic Ingestion	_____ Dermal Allergy

Part of the Body Affected: _____

Degree of Disability: _____

Date Medical Care Was Received: _____

Where Medical Care Was Received: _____

Address (if off site): _____

2. Incident Location

Causative agent most directly related to accident (object, substance, material, machinery, equipment, conditions): _____

Was weather a factor? _____

Unsafe mechanical/physical/environmental condition at time of accident (be specific):

Unsafe act by injured and/or others contributing to the accident (be specific, must be answered):

Personal factors (improper attitude, lack of knowledge or skill, slow reaction, fatigue):

Level of personal protective equipment required by Site Safety Plan:

Modifications: _____

Was injured using required equipment? _____

If not, how did actual equipment use differ from plan? _____

What can be done to prevent a recurrence of this type of accident (modification of machine, mechanical guards, correct environment, training)?

Detailed narrative description (how did accident occur, why; objects, equipment, tools used, circumstances, assigned duties). Be specific.

(Use back of sheet, if required)

Witnesses to accident: _____

Signature of Preparer _____

Signature of Site Manager _____

3. Department Appraisal and Recommendation

In your opinion, what actions or equipment contributed to this accident?

Your recommendation:

Date: _____

Signature of Department Manager _____

4. Costs of the Incident (to be completed by Health Sciences Department)

Temporary total	_____	Permanent partial	_____
Death or permanent total	_____		
Started losing time	_____	Part of body	_____
Returned to work	_____	Percent loss or	
Time charge	_____	loss of use	_____
		Time charge	_____
Compensation	\$ _____	Medical	\$ _____
Other	\$ _____	Total	\$ _____

Name and Address
of Hospital _____

Name and Address
of Physician _____

cc: Office Health and Safety Supervisor
Administrative Manager
Manager of Health Sciences
Medical Consultant

INCIDENT FOLLOW-UP REPORT
(To be Completed by Health Sciences Department)

Date of Incident: _____
Name: _____ Employee No. _____
Site: _____

Brief description of incident: _____

Outcome of incident: _____

Physician's recommendations: _____

Date returned to work: _____

ATTACH ANY ADDITIONAL INFORMATION TO THIS FORM

cc: Office Health and Safety Supervisor
Administrative Manager
Manager of Health Services
Medical Consultant