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NAS PENSACOLA  
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HEALTH AND SAFETY PLAN FOR LONG TERM MONITORING ACTIVITIES AT OPERABLE  
UNIT 13 (OU 13) NAS PENSACOLA FL  
10/1/2007  
AEROSTAR ENVIRONMENTAL



## **NAVAL AIR STATION PENSACOLA, PENSACOLA, FLORIDA SITE-SPECIFIC HEALTH AND SAFETY PLAN**

This Health and Safety Plan (HASP) has been prepared by Aerostar Environmental Services, Inc. (AEROSTAR) at the direction of the Naval Facilities Engineering Command – Southeastern Division in North Charleston, South Carolina. This HASP pertains to the long term groundwater monitoring activities at Operable Unit 13 (Sites 8 and 24) at NAS Pensacola, Florida. Specifically, this HASP addresses the policies and procedures to assist in anticipating, recognizing, evaluating and controlling potential hazards and hazardous substances that may be encountered as part of this project.

All personnel participating in field activities must be trained in the general and specific hazards unique to this job and, if applicable, meet all medical examination and Occupational Safety and Health Administration (OSHA) requirements. All site personnel and visitors shall follow the guidelines, rules and procedures in this document. The AEROSTAR Project Manager (PM) or Site Safety Officer (SSO) may impose any other procedures or prohibitions judged necessary for safe operations.

This document is also intended to assist in compliance with relevant federal and state safety and health regulations governing specific sampling-related activities and was developed in accordance with the following:

United States Department of Labor, OSHA standards, specifically:

- Title 29 CFR Part 1910.120 - Hazardous Waste Site Operations and Emergency Response
- OSHA Construction Industry Standards, 29 CFR 1926, and General

Florida Department of Environmental Protection standards, specifically:

- Chapter 62-770, Florida Administrative Code – Petroleum Contamination Site Cleanup Criteria and the “Guidelines for Assessment and Source Removal of Petroleum Contaminated Soil”

Because site conditions are subject to change, and unforeseen conditions may arise, amendments or additions may need to be made to this HASP during the course of work. Only the AEROSTAR Project Manager and AEROSTAR Safety Officer can authorize modifications to this plan. This HASP will be kept on the site during field activities.

**SITE DESCRIPTION:** NAS Pensacola, Pensacola, Florida – Operable Unit 13 (Sites 8 and 24)

**PROJECT OBJECTIVES** - THE OBJECTIVE OF THIS PROJECT IS TO:

- 1) Perform groundwater sampling of the monitoring wells
- 2) Replace up to six groundwater monitoring wells
- 3) Abandon six monitoring wells

### **UNDERGROUND UTILITIES**

No underground utilities are anticipated to be encountered during the groundwater sampling activities. All utilities will be located by NAS Pensacola and the Florida One Call service.

**AREA/VICINITY DESCRIPTION:** Naval Air Station (NAS) Pensacola is located in Escambia County, approximately five miles west of the Pensacola city limits. The approximate 5,000-acre installation was

constructed in the 1800s. Prior to construction, the facility was undeveloped and sparsely vegetated. Land use at NAS Pensacola consists of various military housing, training, and support facilities, as well as large industrial complexes for major repairs and refurbishment of aircraft engines and frames.

**TOPOGRAPHY AND SITE ACCESS:** The site is located within NAS Pensacola in Escambia County and approximately five miles west of the city limits of Pensacola, Florida. Building 38 is located south of South Avenue along the Boat Basin.

**SUMMARY OF HAZARDS:** A preliminary evaluation of the site’s characteristics has been performed based on information provided to AEROSTAR by the NAS Pensacola, Florida. Based upon historical information and historical activities at the site, the chemical hazards of known concern during groundwater sampling activities are petroleum hydrocarbons. In addition to chemical exposure, other safety hazards exist, including, but not limited to: physical hazards; biological hazards; slip, trip and fall hazards; electrical hazards; heavy equipment hazards and air traffic hazards.

**SITE SAFETY MEETING:** A site safety meeting will be held onsite for all subcontractors and site workers prior to the start of work. The Site Safety Officer will administer the meeting. The purpose of the meeting is to review the requirements of this HASP and to discuss in detail the required personal protective equipment, onsite monitoring procedures, and contingency procedures. The SSO will also verify that each site worker who will enter the work areas is properly trained and has medical clearance to perform work in contaminated areas.

**ONSITE ORGANIZATION AND COORDINATION** - THE FOLLOWING ARE DESIGNATED TO CARRY OUT STATED JOB FUNCTIONS ONSITE.

The employees listed meet state and federal hazardous waste operations requirements for 40-hour initial training, 3-day on-the-job experience, and 8-hour annual refresher training. The employees listed below are currently active in a medical surveillance program that meets state and federal regulatory requirements for hazardous waste operations.

(NOTE: ONE PERSON MAY CARRY OUT MORE THAN ONE JOB FUNCTION.)

<u>RESPONSIBILITY</u>	<u>PRINT FULL NAME</u>
PROJECT MANAGER:	<u>Emilie Wien</u>
PROJECT DIRECTOR:	<u>Philip E. Elson</u>
FIELD TEAM LEADER	<u>Emilie A. Wien</u>
SITE SAFETY OFFICER:	<u>Emilie A. Wien</u>
COPORATE SAFETY OFFICER:	<u>Leon Carrero</u>

ALL ACTIVITIES ON-SITE MUST BE CLEARED BY THE PROJECT DIRECTOR AND SITE SAFETY OFFICER.

The Project Director is responsible for providing adequate resources (budget and staff) for project-specific implementation of the management process. The Project Director has overall management responsibility for the tasks listed below. The Project Manager may explicitly delegate specific tasks to other staff. The Project Manager is responsible for providing technical assistance for the Field Team Leader. The Site Safety Officer and Safety Officer are responsible for verifying that the project is conducted in a safe manner.

## **CHEMICALS OF CONCERN**

### ***Diesel Fuel***

Aspiration of liquid into the lungs may cause extensive pulmonary edema (dry land drowning). Prolonged or repeated skin contact will remove skin oils leading to irritation and/or dermatitis. High vapor concentrations are irritating to the eyes and lungs, and may cause headaches, dizziness, and unconsciousness.

### ***Gasoline (unleaded)***

Gasoline is a mixture of hydrocarbons, including aliphatic hydrocarbons, aromatic hydrocarbons, a variety of branched and unsaturated hydrocarbons, and additives. Extremely high levels of exposure could produce conditions such as dizziness, coma, collapse, and death. Exposure to non-lethal doses is usually followed by complete recovery, although cases of permanent brain damage following massive exposure have been reported.

### ***Fuel Oil***

Fuel oil is comprised of mixtures of petroleum distillate hydrocarbons. The various kinds of fuel oils are obtained by distilling crude oil, and removing the different fractions. In terms of refining crude oil, typical heating oil is a middle distillate. The middle distillates include kerosene, aviation fuel, diesel fuels, and fuel oil #1 and 2. These fuels contain paraffins (alkanes), cycloparaffins (cycloalkanes), aromatics, and olefins from approximately C9 to C20. Aromatic compounds of concern include alkylbenzenes, toluene, naphthalenes, and polycyclic aromatic hydrocarbons (PAHs). Aspiration of liquid into the lungs may cause extensive pulmonary edema (dry land drowning). Prolonged or repeated skin contact will remove skin oils leading to irritation and/or dermatitis. High vapor concentrations are irritating to the eyes and lungs, and may cause headaches, dizziness, and unconsciousness.

### ***JP-5***

Little is known about the effects of JP-5 jet fuel on people's health. Breathing large amounts of JP-5 for a short period have been known to cause neurobehavioral symptoms such as headaches, difficulty in concentrating, coordination problems, and fatigue. Breathing lower levels of JP-5 for a longer period could result in lack of initiative, sleep disturbances, and dizziness. Much information is available on accidental poisonings in children from drinking kerosene. Effects seen include vomiting, diarrhea, stomach cramps, coughing, drowsiness, and loss of consciousness. Drinking very large amounts can result in death. Skin exposure to kerosene results in skin irritation, consisting of itchy, red, peeling, and sore skin. It is not known whether JP-5 jet fuel can affect reproduction or cause birth defects in people or animals. The International Agency for Research on Cancer has concluded that jet fuels are not classifiable as to their carcinogenicity to humans. No human carcinogenicity studies on JP-5 jet fuel are available.

### ***Kerosene***

JP-5 contains kerosene, which is a colorless to yellowish oily, with a strong, characteristic odor. The chemical abstract system (CAS) number for kerosene is 8008-20-6. Exposure routes include eye, skin, ingestion and inhalation. The LEL is 0.7% and the UEL is 5%. It is a moderately combustible liquid and vapor and is to be used with adequate ventilation.

## **CHEMICAL ROUTES OF EXPOSURE**

Bodily injury can result to people onsite if they are exposed to chemicals at concentrations above recommended exposure limits. Toxic chemicals can enter the body through injection, ingestion, eye and skin absorption, and inhalation.

### **Injection**

Injection or skin punctures by sharp or pointed objects represent a very hazardous route of exposure because some form of tissue damage (and the likelihood for infection) is combined with direct transport into the body. Many such routes of entry, such as through broken glass, needles, or work-related tools, can be avoided by following approved safety procedures and wearing appropriate safety boots, long pants, long-sleeved shirt, hard hat, gloves, and shatter-resistant eye and face protection.

### **Ingestion**

Exposure by ingestion involves the oral intake of a hazardous substance. Workers may ingest materials unintentionally when they handle food, drink, smoke, or bite fingernails after contact with the material and before thoroughly washing their hands. Workers may also unintentionally contaminate their families by bringing hazardous substances home with them on their bodies, clothes, or vehicles without adequately decontamination. This route of exposure can be minimized if workers practice adequate personal hygiene by washing thoroughly prior to leaving the work site. Also, many hazardous substances have been known to adsorb into foods, liquids, and tobacco products, thus creating a potential route of exposure through ingestion. For this reason, at no time will food, gum, or tobacco products be allowed in any work area.

### **Eye and Skin Absorption**

The skin is the largest organ of the body, comprising about 2,880 square inches or 19 square feet of surface area and about 15 percent of total body weight. Skin is a tough flexible cover and is the first body barrier to come into contact with a wide variety of industrial hazards. Chemical hazards can cause physical injury to the skin (e.g., chemical burns and dermatitis). The skin may also act as a vehicle of transport for some chemicals through long-term and sometimes brief dermal contact. Similarly, the sensitive eye tissues and mucus membranes, with their inherent high moisture content, may act as a "chemical sponge" that adsorbs hazardous substances causing tissue damage or provides a mode of transport into the body.

Adverse effects of eye and skin absorption of hazardous substances depend on the specific contaminant present and may include local tissue damage, dermatitis, or systemic effects such as liver, kidney, or central nervous system (CNS) effects. Some chemicals such as formaldehyde act as sensitizing agents that produce little effect upon first exposure but exhibit extreme effects (such as heightened allergic reactions) upon subsequent exposures.

Adverse reactions to chemical contact with skin or eyes can be avoided if workers wear appropriately selected PPE, such as Tyvek<sup>®</sup> suits, safety glasses/chemical goggles, gloves, and chemical-resistant boots.

### **Inhalation**

Many foreign materials may be inhaled into the respiratory system, which, generally speaking, comprises numerous nasal and lung tissues. The respiratory system presents a quick and direct avenue of entry for toxic materials into the body because of its intimate association with the circulatory system and the consistent need to oxygenate human tissue cells. Anything affecting the respiratory system also affects the entire human organism, whether the inhaled material is contaminated air such as a toxic gas, dust, or an

irritant, or whether insufficient oxygen is inhaled. Inhaled contaminants that adversely affect the body fall into three general categories:

- Aerosols and dusts, which, when deposited in the lungs, may produce either acute or chronic tissue damage, tissue reaction, adverse health, disease, or physical destruction. Examples of aerosols and dusts are asbestos fibers, which cause fibrotic growth in the alveolar tissue of the lungs and may lead to mesothelioma (a form of lung cancer).
- Toxic gases that produce adverse reaction in the tissue of lungs themselves. One toxic gas, hydrogen fluoride, will cause pulmonary edema and chemical burns of the lung tissues.
- Toxic aerosols or gases that do not affect the lung tissue but are passed from the lung into the bloodstream, where they are carried to other body organs or have adverse effects on the oxygen-carrying capacity of the blood. Carbon monoxide (CO) is an example of a toxic gas that is passed into the bloodstream. Carbon monoxide ties up red blood cells so they cannot accept oxygen, causing oxygen starvation.

Individual susceptibility to inhalation hazards in the occupational setting varies according to factors that include rate of clearance of the lung, effects due to cigarette smoking, any existing pulmonary disease, and genetic factors.

Inhalation hazards can be successfully avoided by using the appropriate National Institute of Occupational Safety and Health (NIOSH) -approved respirators when necessary and by eliminating downwind work stations whenever possible.

## **Safety Hazards**

Site features, conditions, and activities that are potential safety hazards include:

- Excavations, trenches, holes, or ditches (either constructed naturally occurring)
- Slip, trip, and fall hazards
- Contact with sharp or jagged objects such as nails, sharp metal, or broken glass
- Contact with blunt or immovable objects, such as overhangs and beams
- Electrical hazards
- Equipment and machinery hazards
- Unstable surfaces, which may fall or give way
- Unstable objects or structures, which may fall or give way.

Other safety hazards can be caused by the work itself. For example, protective clothing or equipment may impair a worker's agility, hearing, and vision, increasing the risk of an accident.

All personnel, contractors, and subcontractors shall become familiar with the field activities. Hard hats and safety shoes are required in all areas of the site. As minimum requirements, hard hats will be donned prior to performing any site activities. This will prevent minor injuries caused by bumping one's head while working around and under construction equipment. Personnel will be trained in and required to use proper lifting techniques when lifting heavy objects. The following are physical hazards that may be present at the site:

## **Tripping, Slipping, and Falling Hazards**

Personnel will be reminded daily to maintain sure footing on all surfaces. Work surfaces of unknown or suspect integrity will be strengthened or overlain with a work platform capable of supporting all personnel and equipment in use in that area.

To minimize tripping hazards caused by debris, equipment, or other obstacles will be removed daily from the work areas and stockpiled in appropriate designated storage areas. This “house cleaning” effort will be enforced by the SSO at the end of each day.

## **Falling Objects**

All tasks can be accomplished without any object free-falling to the ground.

## **Heavy Equipment and Traffic**

The use of heavy equipment onsite presents the greatest potential for injury to personnel. To minimize these hazards, designated routes will be established for mobilization to and from the site and specific traffic patterns will be established. All trucks will use spotters for backing procedures. All personnel working along roadsides are required to wear orange safety vests.

Personnel needing to approach heavy equipment during operation will observe the following protocols:

1. Make eye contact with the operator.
2. Signal the operator to cease heavy equipment activity.
3. Approach the equipment and inform the operator of intentions.

Only qualified personnel will operate heavy equipment. Those crew members directly involved with spotting for the operator will be the only personnel allowed within the operating radius of the heavy equipment. All other personnel will remain a safe distance away from these operations. Vehicles will yield to all bikes, pedestrians, and railroad crossings.

Only equipment that is in safe working order will be used. To maintain this policy, all equipment brought onto the project site will be inspected for structural integrity, smooth operational performance, and proper functioning of all critical safety devices in accordance with the manufacture's specifications. This inspection will be performed by a qualified equipment operator and the AEROSTAR SSO. Equipment not conforming to the operational and safety requirements during this inspection will not be put into service until all necessary repairs are made to the satisfaction of the inspection group. Only qualified operators familiar with the equipment will be permitted to operate equipment.

## **Electrical Hazards**

To prevent accidents caused by electric shock, the SSO will inspect all electrical connections on a daily basis. He will shut down and lock out any equipment found to have frayed wiring or loose connections until a qualified electrician can be contacted and repairs effected. Electrical equipment will be de-energized and tested by an electrician before any electrical work is done. All equipment will be properly grounded prior to and during all work.

In addition, ground fault circuit interrupters (GFCIs) will be installed whenever possible in each circuit between the power source and tool, unless the presence of a potentially explosive atmosphere precludes this procedure. In the event that generators are used to supply power, these generators will be equipped with GFCIs.

### **Physical Hazards**

Physical hazards involve the potential for injury or adverse health from physical agents such as:

- Noise;
- Heat and cold stress;
- Vibration;
- Explosion and fire;
- Illumination;
- Oxygen deficiency;
- Electrocuting;
- Lacerations, cuts and scrapes;
- Vehicular traffic;
- Falling into excavation;
- Hit by heavy equipment; and
- Lifting heavy equipment.

### **General Health and Safety Work Practices**

This HASP advocates exercising every reasonable precaution when performing the work to prevent property damage and to protect the safety and health of employees, the public, and the environment.

Employees have certain responsibilities for their own safety, as follows:

- Report to work rested, physically and mentally fit to perform the job assignment.
- Working while under the influence of intoxicants, narcotics, or controlled substances is prohibited.
- Wear suitable clothing for the weather and the work.
- Wear PPE and follow established procedures for a particular job. Do not wear jewelry or loose-fitting clothing when operating or near equipment.
- Call the SSO's attention to any behavior or condition that may cause injury or illness to others or damage to property.
- Read warning labels on containers and equipment. Follow specified precautions.
- Discontinue any operation that could lead to injury, illness, or property damage.

- Keep horseplay and other disruptive behavior away from the job.
- Promptly report to the PM/SSO, any occupational injury, illness, or exposure to toxic material. If injured, get first aid. Small injuries can become serious if neglected.
- Promptly inform the PM/SSO whenever new substances, processes, procedures, or equipment that could present new safety and health hazards are brought into work areas or onto projects.
- Do not eat, smoke and/or chew tobacco, or chew gum in work area.
- Do not allow visitors without adequate safety training into the work area.
- Work upwind of any field activity.
- Perform work in a manner that will minimize dust from becoming airborne (i.e., use water spray or wet technique when feasible).
- Do not work alone. Use the "buddy system" during all work activities.
- Enter the work area only while in proper PPE and with a "buddy." The buddy system will also be in effect at any work zone where respirators are being worn.
- While in the work area, avoid contact with objects or soil unless the contact is necessary to the field operation.
- Be alert to abnormal behavior of other personnel that may indicate distress, disorientation, or other ill effects.
- Verify that vehicles have an ABC-rated fire extinguisher and first-aid kit.
- Monitor weather conditions, particularly wind direction, because they could affect potential exposure.
- Be aware of the amount of solar radiation exposed skin is receiving. Take steps to minimize the potential for sunburn.
- Operate a vehicle only if you are a licensed driver. Seatbelts must be worn when operating a company vehicle or when driving a private vehicle on company business.
- Drive vehicles in a safe manner and obey traffic regulations.
- Operate equipment only if you are a trained operator. Conduct and document a daily equipment inspection. Post equipment operating rules in accordance with OSHA regulations.
- Contact the PM/SSO if contact with human body fluids occurs during the administration of first aid.
- These general safety responsibilities listed above also apply to subcontractors and visitors.

### **Activity Hazard Analysis**

The Activity Hazard Assessment (AHA) identifies potential safety, health, and environmental hazards and provides for the protection of personnel, the community and the environment. Because of the possibility for



## SITE CONTROL

A SAFE PERIMETER HAS BEEN ESTABLISHED WITH CONTROL BOUNDARIES IDENTIFIED AND MARKED OFF WITH - (BOUNDARY TAPE, TRAFFIC CONES, BARRICADES).

## PERSONAL PROTECTIVE EQUIPMENT

BASED ON EVALUATION OF POTENTIAL HAZARDS, THE FOLLOWING LEVELS OF PERSONAL PROTECTION HAVE BEEN DESIGNATED FOR THE APPLICABLE WORK AREAS OR TASKS:

<u>JOB FUNCTION</u>	<u>LEVEL OF PROTECTION</u>
<u>Ground Water Sampling</u>	A B C <b><u>D</u></b> OTHER
<u>Replace Monitoring Wells</u>	A B C <b><u>D</u></b> OTHER
<u>Monitoring Well Abandonment</u>	A B C <b><u>D</u></b> OTHER

### Level D PPE

A work uniform affording minimal protection used for nuisance contamination only. The following constitute Level D PPE, which may be used as appropriate:

- Coveralls or field clothing
- Gloves Outer-Nitrile-22-mil maximum with latex inner glove (when potential contact with contaminated soils exists)
- Boots/shoes; leather or chemical-resistant, steel toe and shank
- Safety glasses
- Hardhat
- Earplugs and/or earmuffs
- Escape mask available (optional as applicable)

### Modified Level D PPE

This level of protection applies when concentration(s) and type(s) of airborne substance(s) are known to be below the PELs/TLVs. Air purifying respirators should be readily available. The following constitute Modified Level D PPE, which may be used as appropriate:

- Chemical-resistant clothing (e.g., Tyvek<sup>®</sup>, polyethylene-coated Tyvek<sup>®</sup>, or Saranex<sup>®</sup>) is optional as applicable
- Coveralls or field clothing
- Gloves, outer, chemical-resistant (Nitrile, 22-mil minimum)
- Gloves, inner, chemical-resistant (Latex, 2-mil minimum)
- Boots, outer, chemical-resistant, steel toe and shank (disposable, optional as applicable)
- Safety glasses or chemical splash goggles

- Hardhat (optional as applicable)
- Earplugs and/or earmuffs (optional as applicable)
- Escape mask (optional as applicable)

Note: Use of an air-purifying respirator with Modified Level D PPE will constitute Level C PPE. If a half-face air-purifying respirator is required, it must be NIOSH-approved and fitted with combination organic vapor/HEPA filters.

**NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE FIELD TEAM LEADER AND PROJECT MANAGER.**

## **DECONTAMINATION PROCEDURES**

### **PERSONAL DECONTAMINATION**

Field work is anticipated to be performed in Level D and Modified Level D. Site workers shall wash their hands, face, and exposed skin surfaces with soap and water upon leaving the work area and prior to ingestion of food, liquids or smoking. A portable or fixed hand washing facility with potable water, soap, and paper towels shall be located immediately outside of the work area. Disposable personal protective equipment shall be placed in a sealed metal container, which is double-lined with 6-mil polyethylene bags.

### **EQUIPMENT DECONTAMINATION**

Equipment used during this project shall be decontaminated by pressure washing prior and after each activity. The decontamination pad shall be constructed by overlaying a chemically resistant impermeable flexible membrane, such as high density polyethylene (HDPE), polyvinyl chloride (PVC), or VLDPE with a minimum thickness of 1 mm or 40 mils. The base layer of soil on which the membrane is placed shall be free of objects greater than 0.375 inches in diameter and any other materials which could puncture or damage the membrane. The pad shall be constructed to capture decontamination water, including overspray, and shall allow for collection and removal of the decontamination water using a sump or ditch along one side of the berm. Overspray shall be contained by construction of two (2) vertical walls, six (6) feet in height, using PVC piping and polyethylene sheeting. High pressure, low volume water wash shall be used to remove gross mud and debris from equipment and vehicles. Decontamination water shall be periodically pumped out of the sump into DOT approved 55-gallon drums and stored onsite. These drums shall be later sampled to determine disposal classification and costs. Personnel shall protect themselves while pressure washing equipment by wearing poly-coated Tyvek<sup>®</sup>, faceshields, Nitrile gloves and boots. All loose materials should be brushed off prior to steam cleaning.

A designated "clean area" shall be provided outside the work area for performing equipment maintenance. This area shall be used when personnel are required by normal practices to come in contact with the ground, i.e., crawling under a vehicle to change engine oil. Equipment within the work area shall be decontaminated before maintenance is performed.

Sampling equipment such as hand augers, oil/water interface probe, and other devices that have had direct contact with soil and/or water samples shall be decontaminated individually in a designated area by laying plastic sheeting over the ground surface and placing decontamination tubs on top. This shall prevent spills onto site soils and further protect equipment from unnecessary contact with foreign material. The following procedure shall be conducted during each decontamination event:

1. Wash with laboratory-grade non-phosphate detergent
2. Rinse with tap water
3. Air dry

## ENVIRONMENTAL MONITORING

### Air Monitoring for Project Operations

Analyte/Instrument	Calibration Schedule	Monitoring Frequency	Recommended Action
Petroleum hydrocarbons and VOCs / PID, FID, or OVA	1 x daily before startup of work in accordance with manufacturer's specifications.	Continuously during activities in the EZ that disturb soil. Initially twice per day to determine the potential hazard. Frequency may be upgraded/downgraded based on measured levels.	If sustained reading ( $\geq 1$ minute) of 1 ppm in breathing zone, use benzene colorimetric tube. If benzene detected, stop work, evacuate area, notify PM/SSO
Explosive gases / CGI	1 x daily before startup of work in accordance with manufacturer's specifications. Set alarm at 10% LEL; if feasible, use calibration gas specific to gases suspected to be present.	Continuously during activities in the work area that disturb soil.	If reading $> 10\%$ LEL, personnel must leave area. Use fans to lower LEL. No reentry until LEL $< 10\%$ .

**PID** Photo ionization detector.  
**FID** Flame ionization detector.  
**OVA** Organic vapor analyzer.  
**CGI** Combustible gas indicator  
**LEL** Lower explosive limit.

### ACTION LEVELS

Breathing Zone Background to 200 ppm	Level D protection
200 to 300 ppm over background.	Level C Protection
300 to 500 ppm over background.	
Over 500 ppm over background.	Level B Protection
	EVALUATE EXPOSURE SOURCE

## **EMERGENCY RESPONSE PLAN**

### **PRE-EMERGENCY PLANNING**

The SSO performs the applicable pre-emergency planning tasks before starting field activities and coordinates emergency response with onsite parties, the facility, and local emergency-service providers as appropriate.

- Review the facility emergency and contingency plans where applicable.
- Determine what onsite communication equipment is available.
- Determine what offsite communication equipment is needed (e.g., nearest telephone, cell phone).
- Confirm and post emergency telephone numbers, evacuation routes, assembly areas, and route to hospital; communicate the information to onsite personnel.
- Review changed site conditions, onsite operations, and personnel availability in relation to emergency response procedures.
- Where appropriate and acceptable to the client, inform emergency room and ambulance and emergency response teams of anticipated types of site emergencies.
- Designate one vehicle as the emergency vehicle; place hospital directions and map inside; keep keys in ignition during field activities.
- Inventory and check site emergency equipment, supplies, and potable water.
- Communicate emergency procedures for personnel injury, exposures, fires, explosions, and releases.
- Rehearse the emergency response plan before site activities begin, including driving route to hospital.
- Brief new workers on the emergency response plan.

### **EMERGENCY EQUIPMENT AND SUPPLIES**

The Site Safety Officer should mark the locations of emergency equipment on the site map and post the map.

#### **Emergency Equipment and Supplies**

20 LB (or two 10-LB) fire extinguisher (A, B, and C classes)

First Aid Kit

Eye Wash

Potable Water

Bloodborne-pathogen kit

#### **Location**

Support Zone/Heavy Equipment

Support Zone/Field Vehicle

Support &Decon Zone/Field Vehicle

Support &Decon Zone/Field Vehicle

Field Vehicle

## **EVACUATION**

- Evacuation routes and assembly areas will be designated by the SSO before work begins.
- Personnel will assemble at the assembly area upon hearing the emergency signal for evacuation.
- The Site Safety Officer and a “buddy” will remain on the site after the site has been evacuated (if safe) to assist local responders and advise them of the nature and location of the incident.
- The SSO will account for all personnel in the onsite assembly area.
- A designated person will account for personnel at alternate assembly areas.
- The SSO will write up the incident as soon as possible after it occurs and submit a report to the Corporate Director of Health and Safety.

## **EVACUATION SIGNALS**

### **Signal**

Grasping throat with hand  
Thumbs up  
Grasping buddy’s wrist  
Continuous sounding of horn

### **Meaning**

Emergency-help me.  
OK; understood.  
Leave area now.  
Emergency; leave site now.

### **Emergency Phone Numbers**

LOCAL POLICE	911
LOCAL FIRE	911
LOCAL RESCUE	911

LOCAL HOSPITAL: Branch Medical Clinic - NAS Pensacola  
450 Turner Street  
Pensacola, FL 32508  
(850) 452-5242 ext. 131

Branch Medical Clinic has ALS capabilities, paramedics, and ambulances (full life-support capabilities).

### **KEY PERSONNEL: Office Resources**

Aerostar Environmental Services, Inc.  
(504) 486-8368 - (504) 486-8360 Fax  
4640 South Carrollton Avenue, Suite 160  
New Orleans, Louisiana 70119

PRESIDENT:	<u>Dawn Blackledge, P.G.</u>
PROJECT MANAGER:	<u>Emilie Wien</u>
PROJECT DIRECTOR:	<u>Philip E. Elson</u>
FIELD TEAM LEADER	<u>Emilie A. Wien</u>
SITE SAFETY OFFICER:	<u>Emilie A. Wien</u>
CORPORATE SAFETY OFFICER:	<u>Leon Carrero</u>
EQUIPMENT OPERATOR:	<u>James Astry</u>



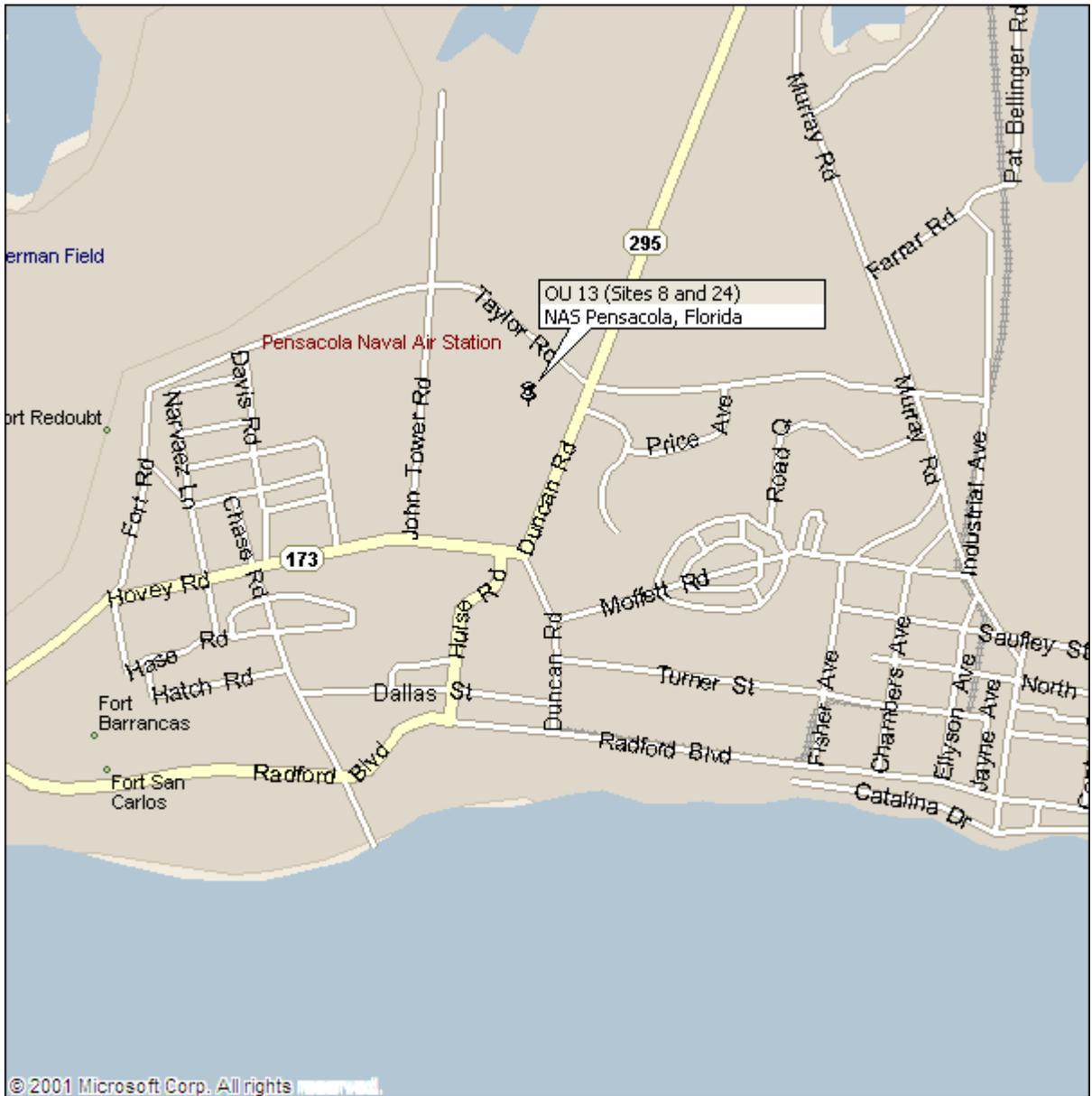


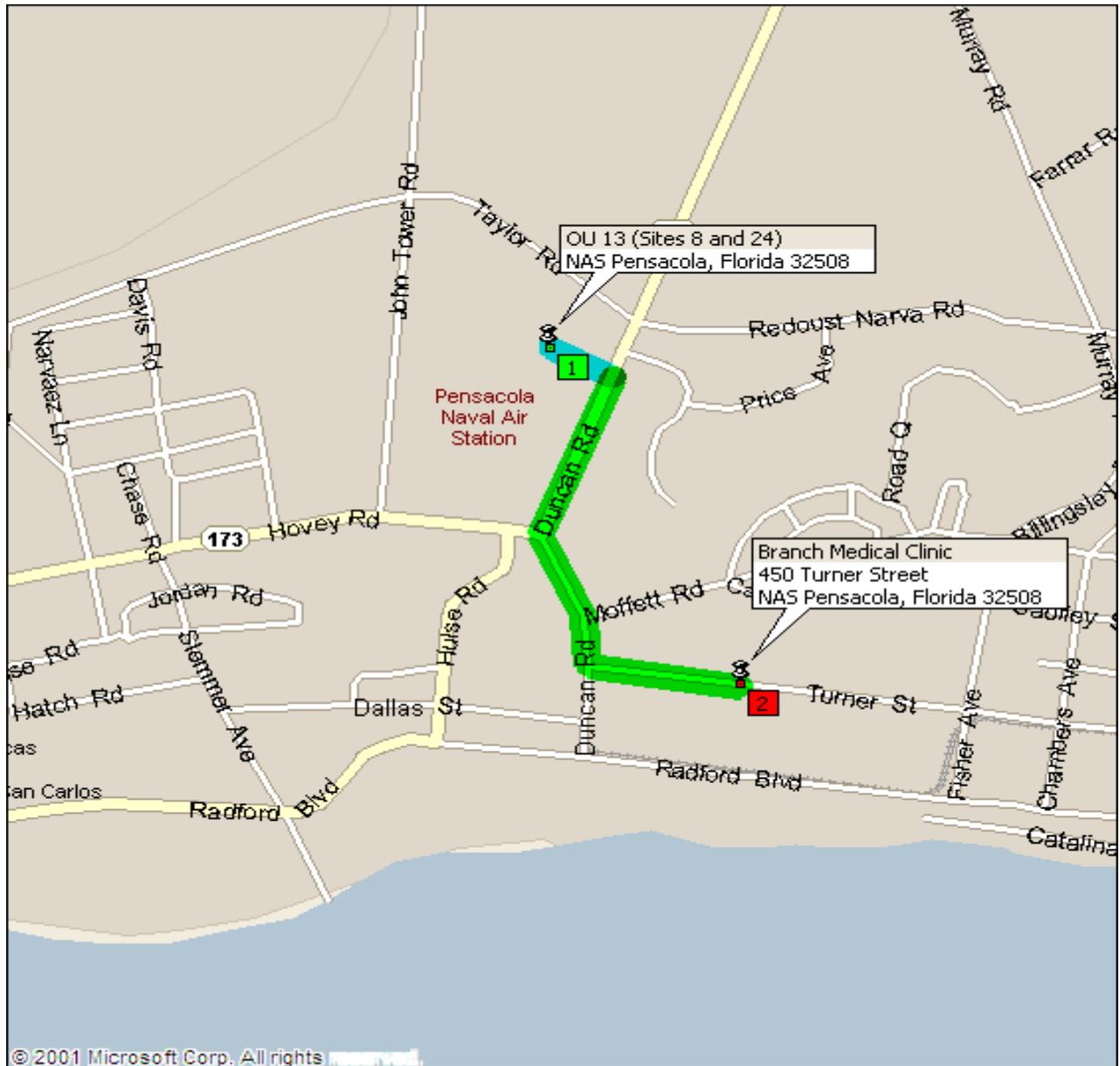
FIGURE 1 - STREET SITE LOCATION MAP



OPERABLE UNIT 13 (SITES 8 AND 24)  
 NAS PENSACOLA  
 PENSACOLA, ESCAMBIA COUNTY  
 FLORIDA

DRAWN BY: EAW

REFERENCE: MAP OF  
 PENSACOLA, FLORIDA  
 PREPARED BY: THE  
 MICROSOFT CORP.



Mile	Instruction	For
0.0	Depart OU 13 (Sites 8 and 24) on Local road(s) (East)	142 yds
0.1	Turn RIGHT (South) onto SR-295 [Duncan Rd]	0.2 mi
0.3	Bear LEFT (South) onto Duncan Rd	0.2 mi
0.5	Turn LEFT (East) onto Turner St	0.2 mi
0.7	Arrive 450 Turner St, Pensacola, FL 32508	

FIGURE 2 HOSPITAL LOCATION MAP



OPERABLE UNIT 13 (SITES 8 AND 24)  
 NAS PENSACOLA  
 PENSACOLA, ESCAMBA COUNTY,  
 FLORIDA

DRAWN BY: EAW

REFERENCE: MAP OF  
 PENSACOLA, FL  
 PREPARED BY: THE  
 MICROSOFT CORP.