

**Federal Radiological Monitoring and Assessment Center
HEALTH AND SAFETY PLAN**

Version: _____

Date: _____

Location: _____

Approved by:

Health and Safety Manager

Date

Name/Title

Date

Name/Title

Date

Name/Title

Date

A. Site Description

Working name of site: _____

Location: _____

Surrounding population: industrial residential rural urban

unpopulated other/more details: _____

Topography: _____

Primary Hazards:

Chemical Exposure

Biological Hazards

Fire/Explosion

Safety Hazards

Oxygen Deficiency

Heat Stress

Confined/Enclosed Space Entry

Cold Exposure

Ionizing Radiation

Noise

Other: _____

Path of radiological or other hazardous material dispersion: _____

Plume has been noted on the site map: Yes No

B. Work Plan and Entry Objectives

1. All operations shall be conducted in accordance with procedures established during field team briefings, in attached plans, and in *the FRMAC Health and Safety Manual*.
2. Daily entry objectives may include documenting site monitoring, sample collection, and related activities. Detailed objectives will be developed daily and will be described during the field team safety briefing.

C. Staff Organization and Responsibilities

Site Safety Briefings/Meetings

1. All personnel, employees, contractors, and subcontractors shall be provided with an initial site safety briefing to communicate the nature, level, and degree of hazards expected on site.
2. Personnel will also receive regular briefings before and after each shift and when significant changes are made in the work procedures or safety plans. The Health and Safety Manager or designee shall hold these site safety meetings/briefings. At a minimum these meetings will describe the work to be accomplished, discuss safety procedure changes, and note any items which need to be communicated to other personnel. General safety training topics should also be covered based on points raised in previous meetings and safety plan attachments.

The **FRMAC Director** is responsible for direct management of FRMAC operations.

Name: _____ Phone: _____

The **Health and Safety (H&S) Manager** is responsible for the health and safety of FRMAC responders. The responsibilities of the Health and Safety Manager include (but are not limited to):

- coordination of all safety and health concerns for the entire work site
- keeping this plan current, and
- Liaison with site safety officers from other organizations.

The Health and Safety Manager for this incident is:

Name: _____ Phone: _____

The Public Affairs Officer is responsible for communication with the media.

Name: _____ Phone: _____

Other key officials:

Name/Title/Organization Phone

Name/Title/Organization Phone

Name/Title/Organization Phone

D. Site Control Information

1. Anyone entering or departing an impacted area, shall report to the Monitoring Manager or designated representative.
2. No person shall enter the site without subscribing to this or another applicable Health and Safety plan.
3. The buddy system is mandatory for all field-monitoring teams.
4. Training
 - Personnel shall be adequately trained to perform their assigned tasks safely.
 - All personnel entering the impacted area shall be fully informed about potential hazards and applicable procedures at the site.
5. Personnel monitoring required for entry to impacted areas include:

Dosimetry:

Personal Dosimeter (TLD) Self-Reading Dosimeter (EPD or PIC)

Other monitoring:

Personal Air Sampling

Bioassay (type, frequency, etc.) _____

6. A map, which includes the location of applicable items such as: zone boundaries, washing, toilet/hygiene facilities, first aid equipment, fire extinguishers, command posts, equipment staging/storage, eating/rest areas, and locations of identified hazards, will be provided.

E. Hazard Evaluations

A chemical hazard evaluation shall be made as part of each work plan. Generic hazardous substance information sheets (MSDSs) are attached, as applicable.

Environmental monitoring for radiological or chemical hazards shall be conducted. Monitoring equipment shall be calibrated and maintained in accordance with the manufacturer's instructions.

Type of Monitoring

Frequency

- | | | | | |
|---|-------------------------------------|---------------------------------|--------------------------------|---------------------------------|
| <input type="checkbox"/> Radiation | <input type="checkbox"/> continuous | <input type="checkbox"/> hourly | <input type="checkbox"/> daily | <input type="checkbox"/> other: |
| <input type="checkbox"/> Combustible Gas | <input type="checkbox"/> continuous | <input type="checkbox"/> hourly | <input type="checkbox"/> daily | <input type="checkbox"/> other: |
| <input type="checkbox"/> Oxygen | <input type="checkbox"/> continuous | <input type="checkbox"/> hourly | <input type="checkbox"/> daily | <input type="checkbox"/> other: |
| <input type="checkbox"/> PID | <input type="checkbox"/> continuous | <input type="checkbox"/> hourly | <input type="checkbox"/> daily | <input type="checkbox"/> other: |
| <input type="checkbox"/> WBGT / heat stress | <input type="checkbox"/> continuous | <input type="checkbox"/> hourly | <input type="checkbox"/> daily | <input type="checkbox"/> other: |
| <input type="checkbox"/> Noise | <input type="checkbox"/> continuous | <input type="checkbox"/> hourly | <input type="checkbox"/> daily | <input type="checkbox"/> other: |

Other chemical specific monitors (colorimetric/electronic)

Type of Monitoring

Frequency

- | | | | | |
|-----------|-------------------------------------|---------------------------------|--------------------------------|---------------------------------|
| chemical: | <input type="checkbox"/> continuous | <input type="checkbox"/> hourly | <input type="checkbox"/> daily | <input type="checkbox"/> other: |
| chemical: | <input type="checkbox"/> continuous | <input type="checkbox"/> hourly | <input type="checkbox"/> daily | <input type="checkbox"/> other: |
| chemical: | <input type="checkbox"/> continuous | <input type="checkbox"/> hourly | <input type="checkbox"/> daily | <input type="checkbox"/> other: |
| chemical: | <input type="checkbox"/> continuous | <input type="checkbox"/> hourly | <input type="checkbox"/> daily | <input type="checkbox"/> other: |
| chemical: | <input type="checkbox"/> continuous | <input type="checkbox"/> hourly | <input type="checkbox"/> daily | <input type="checkbox"/> other: |
| chemical: | <input type="checkbox"/> continuous | <input type="checkbox"/> hourly | <input type="checkbox"/> daily | <input type="checkbox"/> other: |

F. General Safe Work Practices

Depending on the circumstances, any or all of the safe work practices listed below will be adhered to while on site. Place a check next to those that are appropriate for this deployment and add any additional ones that may be required.

- BUDDY SYSTEM:** The buddy system shall be observed inside the work area. Personnel must work within sight of their assigned partner at all times. The site supervisor shall assign a partner as personnel check in.
- FIRES:** Each manned response area shall have at least 1 each of the following:
- a fully charged Class A fire extinguisher for ordinary fires,
 - a fully charged Class B fire extinguisher for liquid fires.

The above items shall be maintained in a readily accessible location and clearly labeled.

- LIGHTING:** Fixed or portable lighting shall be maintained for dark areas or work after sunset to ensure that sufficient illumination is provided. (Table H-120.1 of CFR 1910.120(m) for minimum illumination intensities.)
- LIGHTNING:** Abide by the 30/30 rule for lightning.
- WORK NEAR WATER:** All personnel working in boats, on docks, or generally within 10 feet of water deeper than 3 feet, shall wear approved Personal Floatation Devices (PFDs) or work vests.
- HEAT STRESS:** The site safety and health supervisor shall follow the American Conference of Governmental Industrial Hygienists (ACGIH) guidelines in determining work/rest periods. Fluids shall be available at all times and encouraged during rest periods.
- COLD STRESS:** The site safety and health supervisor shall follow the ACGIH guidelines in determining work/rest periods. Workers shall be provided with adequate warm clothing, rest opportunities, and exposure protection. Warm and/or sweet fluids shall also be available during rest periods.
- HIGH NOISE LEVELS:** Hearing protection shall be used in high noise areas (exceeding 85 dBA--generally where noise levels require personnel to raise their voices to be heard) or where designated by an H&S Representative.
- ELECTRICAL HAZARDS:** Electrical hazards are designated on the site map, and shall be marked with suitable placards, barricades, or other appropriate warning.
- TRAP HAZARDS:** Open manholes, pits, trenches, or similar hazards are noted on the site map. The site safety supervisor shall ensure that these locations are periodically checked during the day.
- CARBON MONOXIDE:** Equipment operators shall ensure that personnel do not linger or work near exhaust pipes.
- UV LIGHT EXPOSURE:** Sunscreens of protection factor 15 (or greater) and UV tinted safety glasses shall be made available for response personnel as needed.
- HELICOPTER OPERATIONS:** Pilots shall provide a safety briefing to all passengers.
- MOTOR VEHICLES:** Drivers shall maintain a safe speed at all times, and shall not be allowed to operate vehicles in a reckless manner. Seat belts will be worn. Vehicles should pull off road to take measurements.
- ALL TERRAIN VEHICLES (ATV's):**

Drivers shall maintain a safe speed at all times, and shall not be allowed to operate vehicles in a reckless manner. ATV drivers shall not operate ATVs outside of areas and lanes specified by the Health and Safety Manager.

DRUM HANDLING & HEAVY LIFTING:

- Drums and containers must be handled in accordance with 29 CFR 1910.120. Containers must be labeled and constructed in accordance with EPA (40 CFR 264-265, and 300), and DOT (49 CFR 171-178) regulations.
- Temporary holding/staging areas for drums and containers containing waste materials shall be constructed to contain spillage, runoff, or accidental releases of materials.
- Manual lifting and handling of drums and/or containers shall be kept to a minimum. Mechanical devices, drum slings or other mechanical assisting devices designed for that purpose shall be used whenever possible.

CONFINED SPACES: Confined spaces will not normally be entered by response personnel. If a confined space must be entered or hotwork conducted in a confined space, a specific confined space entry work plan and confined space work authorization checklist will be developed for that operation.

Flora & Fauna Awareness: The following listed items represent the types of dangers that may be associated with the plants, insects, and animals native to the area of deployment. The H&S Manager will get the information to determine the specific dangers faced in the particular area covered by the site-specific plan.

- | | |
|--|--|
| <input type="checkbox"/> Insect Stings | Bee (European and Africanized), hornet, or wasps |
| <input type="checkbox"/> Poisonous spiders | Black widow, brown recluse, scorpions, tarantula |
| <input type="checkbox"/> Ticks | Carriers of Rocky Mountain spotted fever and Lyme disease |
| <input type="checkbox"/> Animal Bites | Skunks, prairie dogs, foxes, bats, dogs, cats, raccoons, and horses may not necessarily be life threatening but bites or scratches may pose an infection hazard, and/or rabies, as well as problems associated with open wounds. |
| <input type="checkbox"/> Snake Bites | Rattlesnakes, water moccasins, and coral snakes |
| <input type="checkbox"/> Poisonous Plants | Poison ivy, oak, or sumac |

General Precautions

- During morning safety briefings, provide information on the location of hazards and how to deal with problems.

Personnel should be provided with the following, as needed:

- long-sleeve clothing insect repellent snake leggings
- Personnel should inspect each other for ticks and signs of infected bites during breaks when working in designated areas.
- Personnel with severe allergies must work in areas away from known/suspected hazards.
- Personnel with allergies to bee stings or other insect bites should notify their supervisors and the Health and Safety Manager when reporting on this site. They should also carry emergency antidotes on them whenever possible. Supervisors on site should be prepared to deal with the medical emergencies that may result when personnel with allergies receive bites or stings.

Additional areas of concern: _____

G. Personal Protective Equipment (PPE)

The following PPE ensembles shall be used while on site. Circle the required level.

Location	Team/Task	Level			
_____	Monitoring Teams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	Decontamination Teams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	Hotline Teams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Additional PPE Requirements:

Location	Team/Task	Level
_____	_____	_____
_____	_____	_____
_____	_____	_____

Notes: _____

H. Emergency Procedures

1. *When an on-site emergency occurs, personnel shall not reenter the area or restart work until:*
 - the condition resulting in the emergency has been investigated by supervisory personnel, and has been corrected
 - hazards have been reassessed
 - personnel have been briefed on any changes in the operation and site safety plan
 - Hospitals listed in the communications section (Section I) have been contacted
Note: *The emergency hospital must agree to take radiological patients*
 - Fire departments listed in the communications section have been contacted.
 - Ambulance services listed in the communications section have been contacted. Note those which will take radiological emergencies.
 - Police forces listed in the communications section have been notified.

2. *Emergency Medical Procedures*
 - Contact designated EMT
 - Do not attempt to move seriously injured personnel, call for an ambulance to come to the injured person.
 - T
The closest hospital for regular emergencies is: _____
(see communications section for phone number)
 - T
The closest hospital for radiological emergencies is: _____
(see communications section for phone number)
 - Contact ATSDR (404) 639-0615 (24 hours) for chemical exposure emergencies.
 - Contact REAC/TS (865) 576-3131 (24-hour line: (865) 576-1005) for radiological exposure emergencies.

3. *Emergency Fire Procedures*
 - DO NOT attempt to fight fires other than small fires. A small fire is generally considered to be a fire in the early stages of development, which can readily be extinguished with personnel and equipment in the immediate area in a few seconds.

- You MUST notify proper personnel and call the fire department if the fire cannot be put out quickly. Do not take extraordinary measures to fight fires.

4. Evacuation Procedure

EVACUATION NOTIFICATION

Field Elements: _____

Technical Operations Center(TOC): _____

PRIMARY EVACUATION ROUTE

Field Elements: _____

TOC: _____

SECONDARY EVACUATION ROUTE

Field Elements: _____

TOC: _____

ASSEMBLY POINT

Field Elements: _____

TOC: _____

I. Communication Methods

1. General Signals

SIGNAL	MEANING
Thumbs up	I'm OK / I agree
Thumbs down	I don't agree
Hands across throat	I'm out of air / trouble breathing
Grab a hand/arm	I'm out of air / trouble breathing
Hands on head	I'm out of air / trouble breathing

2. Radio Communications

Working:
frequency: _____ channel: _____ VHF UHF CB Other

Working:
frequency: _____ channel: _____ VHF UHF CB Other

3. Phone Communications

FRMAC Director:

Voice/phone: _____ Fax: _____

Cellular: _____ Pager: _____

Health and Safety Manager:

Voice/phone: _____ Fax: _____

Cellular: _____ Pager: _____

Radiation Emergency Assistance Center and Training Site (REAC/TS):

Phone number: (865) 576-3131 24 hour line:(865) 576-1005

Agency for Toxic Substance and Disease Registry (ATSDR):

24 hour line (voice): (404) 639-0615 Fax: (404) 639-0655

Police: _____

Fire: _____

Ambulance/EMT/Hospital: _____

Other numbers: _____

J. Attachments

The following are attachments that may be required, depending on the needs and circumstances at the site. If other forms or attachments are required, add those to the list. Then place a checkmark on the line in front of the pertinent plans for this site.

- Turn Back Levels (Turn Around Levels)
- Health and Safety Air Monitoring Plan
- Bioassay Plan
- Contamination Control Plan (area surveys, personnel surveys, etc.)
- Decontamination Plan
- Survey Plan
- Hotline Plan (sample, personnel, equipment, etc.)
- Others: _____

Name of plan

Name of plan

Name of plan

Name of plan